This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.08 MGD wastewater treatment plant. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260 *et seq.*

1.	Facility Name and Mailing Address:	Madison WWTP P. O. Box 148 Ruckersville, VA 22968	SIC Code :	4952 WWTP
	Facility Location:	1033 Fishback Road Madison, VA 22727	County:	Madison
	Facility Contact Name:	Timothy Clemons	Telephone Number:	434-985-7811
	Facility E-mail Address:	tclemons@rapidan.org		
2.	Permit No.:	VA0022845	Expiration Date of previous permit:	July 23, 2014
	Other VPDES Permits associated with this facility:		None	
	Other Permits associated with this facility:		None	
	E2/E3/E4 Status:	NA		
3.	Owner Name:	Rapidan Service Authority		
	Owner Contact/Title:	Dudley M. Pattie/ General Manager	Telephone Number:	434-985-7811
	Owner E-mail Address:	dpattie@rapidan.org		
4.	Application Complete Date:	January 2, 2014		
	Permit Drafted By:	Joan C. Crowther	Date Drafted:	9/25/14
	Draft Permit Reviewed By:	Anna Westernik	Date Reviewed:	10/6/14
	Draft Permit Reviewed By:	Alison Thompson	Date Reviewed:	10/14/14
	Public Comment Period :	Start Date: 12/4/14	End Date:	1/5/15

5. Receiving Waters Information: See Attachment 1for the Flow Frequency Determination

Receiving Stream Name :	Little Dark Run	Stream Code:	3-LDR
Drainage Area at Outfall:	2.5 sq.mi.	River Mile:	2.12
Stream Basin:	Rappahannock River	Subbasin:	None
Section:	4	Stream Class:	III
Special Standards:	None	Waterbody ID:	VAN-E15R
7Q10 Low Flow:	0.0 MGD	7Q10 High Flow:	0.32 MGD
1Q10 Low Flow:	0.0 MGD	1Q10 High Flow:	0.25 MGD
30Q10 Low Flow:	0.0 MGD	30Q10 High Flow:	0.41 MGD
Harmonic Mean Flow:	0.65 MGD	30Q5 Flow:	0.05 MGD

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

X	State Water Control Law	X	EPA Guidelines
X	Clean Water Act	X	Water Quality Standards
X	VPDES Permit Regulation	___	Other
X	EPA NPDES Regulation		

7. Licensed Operator Requirements: Class III

8. Reliability Class: Class II

9. Permit Characterization:

___	Private	___	Effluent Limited	___	Possible Interstate Effect
___	Federal	X	Water Quality Limited	___	Compliance Schedule Required
___	State	___	Whole Effluent Toxicity Program Required	___	Interim Limits in Permit
X	POTW	___	Pretreatment Program Required	___	Interim Limits in Other Document
X	TMDL	X	e-DMR Participant		

10. Wastewater Sources and Treatment Description:

The Madison Wastewater Treatment Plant consists of an influent manhole with a manually cleaned bar screen prior to a flow splitter which splits the flow to two parallel package plants. Each plant consists of an aerobic sludge digestion tank, an aeration basin, and a clarifier. Chlorination is used for disinfection which is accomplished with a gaseous chlorine feed system and a chlorine contact tank. Sulfur Dioxide is used for dechlorination. The effluent flow is measured with a Parshall Flume and an ultrasonic meter. The effluent is post aerated prior to discharge to Little Dark Run.

Hydrated lime is added to each aeration basin at a rate of approximately 100 pounds per day for pH control and alkalinity replacement due to nitrification. Polymer is also being added to each clarifier as necessary by flow to aid in settling.

Madison WWTP schematic/diagram:

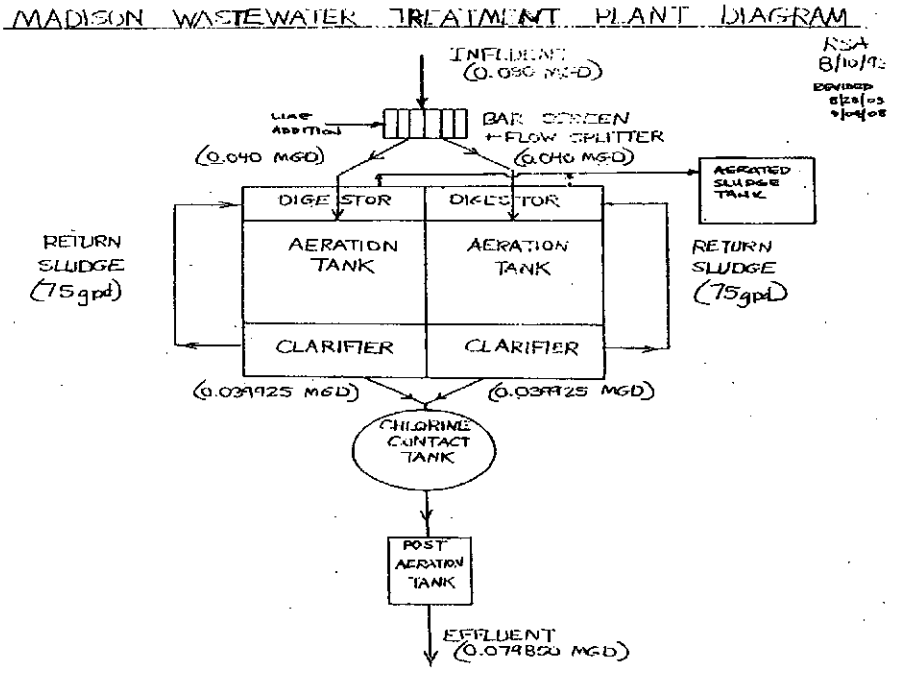
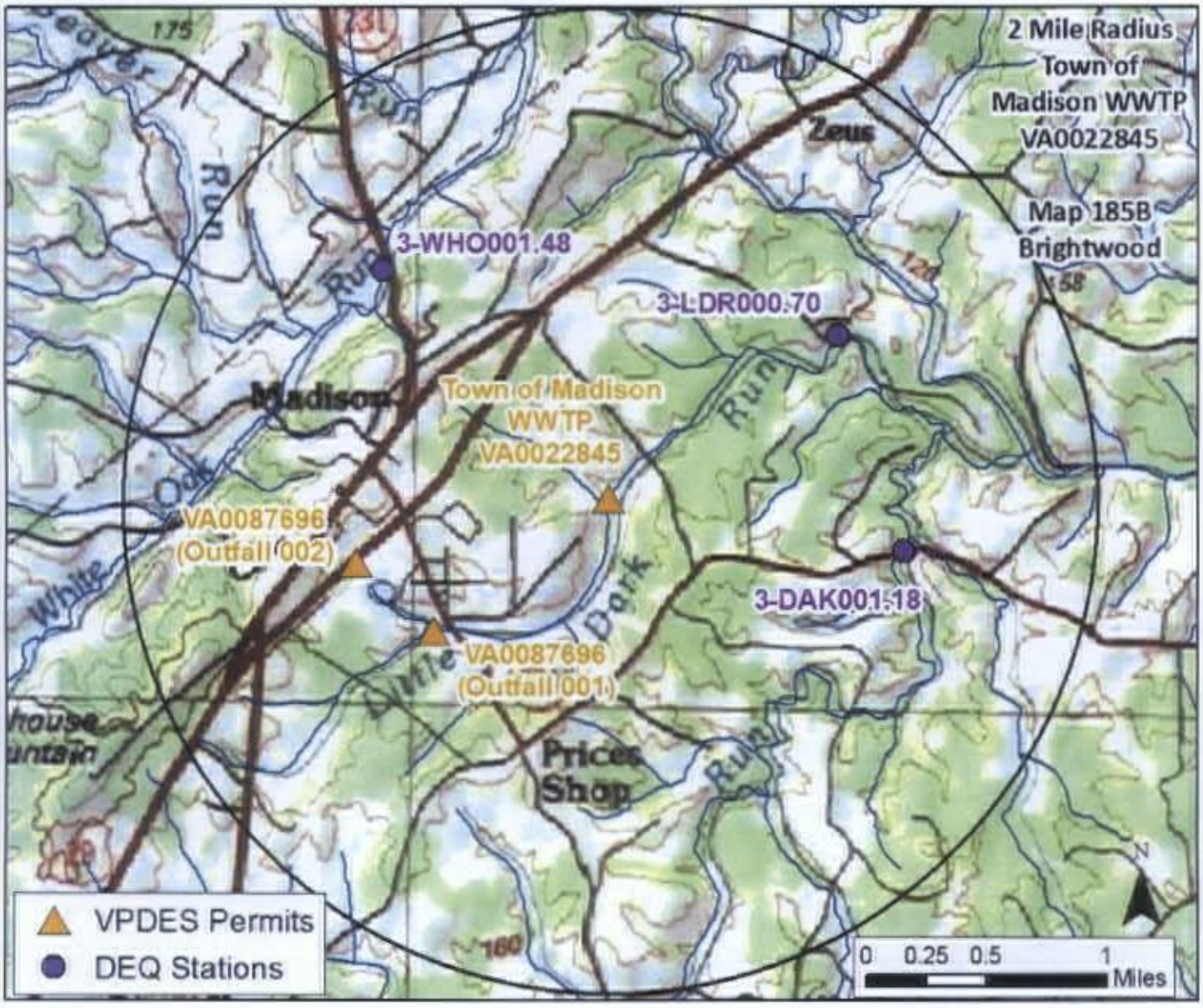


TABLE 1 – Outfall Description				
Outfall Number	**Discharge Sources**	**Treatment**	**Design Flow(s)**	**Outfall Latitude and Longitude**
001	Domestic Wastewater	See Item 10 above.	0.08MGD	38° 22' 48" 78° 14' 11"

USGS Topographic Map Brightwood, DEQ Map Number 185B



11. Sludge Treatment and Disposal Methods:

Waste sludge from the clarifiers is aerobically digested in a 16,000 gallon aerated sludge tank. The tank is decanted, with the supernatant returned to the head of the plant, and then the slightly thickened sludge is applied to one of the 5 sand drying beds. When the sludge is dry, it is manually removed and trucked to the Maplewood Recycling and Waste Disposal Facility for disposal.

12. Discharges and DEQ Water Monitoring Stations within a 2 Mile Radius of the Discharge

TABLE 2 – Other Items	
VA0087696	VPDES Permit for Madison Wood Preservers Incorporated, Two Outfalls into Little Dark Run
3-DAK001.18	DEQ Monitoring Station, Dark Run, Located at Rt.634
3-WHO001.48	DEQ Monitoring Station, White Oak Run, Located at Rt. 231 (Blue Ridge Turnpike)
3-LDR000.70	DEQ Monitoring Station, Little Dark Run, Located at Rt. 680

13. Material Storage:

TABLE 3– Chemical Storage		
Materials Description	Volume Stored	Spill Prevention Measures
Hydrated Lime	Up to forty 50# bags	Stored indoors.
Polymer	One 5 gallon bucket	Stored indoors in a chemical room.
Chlorine Gas	Up to six 150# cylinders	Contained in a secure building with a leak detector
Sulphur Dioxide Gas	Up to six 150# cylinders	Contained in a secure building with a leak detector

14. Site Inspection:

The last technical and laboratory what was performed is on June 14, 2007 by Ms. Wilamena Harbeck. (See Attachment 2).

15. Receiving Stream Water Quality and Water Quality Standards:

a. Ambient Water Quality Data
This facility discharges into Little Dark Run. The nearest downstream DEQ ambient monitoring station is 3-LDR000.70, located at the Route 680 bridge crossing, approximately 1.4 miles downstream of Outfall 001. The following is the water quality summary for Little Dark Run, as taken from the 2012 Integrated Report:

E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. A bacteria TMDL for the Little Dark Run watershed was completed and approved by U.S. EPA on 12/12/2005. The aquatic life, fish consumption and wildlife uses are considered fully supporting.

b. 303(d) Listed Stream Segments and Total Maximum Daily Loads (TMDLs)

Table 4 - 303(d) Impairment and TMDL Information for the Receiving Stream Segment						
Waterbody Name	**Impaired Use**	**Cause**	**TMDL completed**	**WLA**	**Basis for WLA**	**TMDL Schedule**
Impairment Information in the 2012 Integrated Report						
Little Dark Run	Recreation	*E. coli*	Robinson River Bacteria 12/12/2005	1.39E+11 cfu/year *E. coli*	126 cfu/100ml *E. coli* --- 0.08 MGD	TMDL modified 04/29/2009

Table 5 - Information on Downstream 303(d) Impairments and TMDLs							
Waterbody Name	**Impaired Use**	**Cause**	**Distance From Outfall**	**TMDL completed**	**WLA**	**Basis for WLA**	**TMDL Schedule**
Impairment Information in the 2012 Integrated Report							
Rapidan River	Fish Consumption	Mercury	45 miles	No	---	---	2022

The tidal Rappahannock River, which is located approximately 70 miles downstream of this facility, is listed with a PCB impairment. In support for the PCB TMDL that is scheduled for development by 2016 for the tidal Rappahannock River, this facility is a candidate for low-level PCB monitoring, based upon its designation as a minor municipal facility. Low-level PCB analysis uses EPA Method 1668, which is capable of detecting low-level concentrations for all 209 PCB congeners. DEQ staff has concluded that low-level PCB monitoring is not warranted for this facility, as it is a small wastewater treatment facility (<0.1 MGD). Based upon this information, this facility will not be requested to monitor for low-level PCBs.

There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the 2012 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment. EPA issued the Bay TMDL on December 29, 2010. It was based, in part, on the Watershed Implementation Plans developed by the Bay watershed states and the District of Columbia.

The Chesapeake Bay TMDL addresses all segments of the Bay and its tidal tributaries that are on the impaired waters list. As with all TMDLs, a maximum aggregate watershed pollutant loading necessary to achieve the Chesapeake Bay's water quality standards has been identified. This aggregate watershed loading is divided among the Bay states and their major tributary basins, as well as by major source categories [wastewater, urban storm water, onsite/septic agriculture, air deposition]. Fact Sheet Section 17.e provides additional information on specific nutrient monitoring for this facility to implement the provisions of the Chesapeake Bay TMDL.

The planning statement is found in Attachment 3.

c. Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream Little Dark Run is located within Section 4 of the Rappahannock River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

The Freshwater Water Quality/Wasteload Allocation Analysis (Attachment 4) details other water quality criteria applicable to the receiving stream.

Some Water Quality Criteria are dependent on the temperature and pH and Total Hardness of the stream and final effluent. The stream and final effluent values used as part of Attachment 4 are as follows:

pH and Temperature for Ammonia Criteria:
The fresh water, aquatic life Water Quality Criteria for Ammonia is dependent on the instream temperature and pH. Since the effluent may have an impact on the instream values, the temperature and pH values of the effluent must also be considered when determining the ammonia criteria for the receiving stream. The 90th percentile temperature and pH values are used because they best represent the critical design conditions of the receiving stream.

Staff has re-evaluated the effluent data for pH and temperature. The 2009 permit reissuance found no significant differences from the 2004 permit reissuance and carried that pH and temperature data forward. However, staff could not document these pH and temperature data. Therefore, daily effluent data for pH from January 2010 through July 2014 was used to establish the effluent data for this permit reissuance. The 90th percentile pH value for the "wet season" (December – May) is 7.4 SU. The 90th percentile pH value for the "dry season" (June – November) is 7.5 SU. The temperature default values of 25°C ("dry

season") and 15°C ("wet season") were used. The pH data can be found in Attachment 5.

The 7Q10 and 1Q10 of the receiving stream are 0.0 MGD. However, there is stream flow for the wet season months of December through May. See Attachment 6 for mixing zone prediction for wet season (December – May). The receiving stream temperature and pH data was determined by using the collective stream data from the waterbody VAN-E15. This stream data was collected from the available data from January 1990 through February 2011. The following data is taken from the waterbody VAN-E15 collective stream data: 1) annual 90th percentile temperature 24°C; 2) 90th percentile "wet season" temperature 13.4 °C; 3) annual 90th percentile pH 7.6 SU; 4) 10th percentile pH 6.7 SU; 5) wet season 90th percentile pH 7.5 SU; and 6)10th percentile pH 6.7 SU.

Total Hardness for Hardness-Dependent Metals Criteria:
The Water Quality Criteria for some metals are dependent on the receiving stream's total hardness (expressed as mg/L calcium carbonate) as well as the total hardness of the final effluent.

The Madison WWTP collects monthly effluent total hardness data. The effluent hardness data for the period of January 2010 through July 2014 was used to determine the total hardness average value of 224 mg/L. See Attachment 7 for the effluent total hardness data. The waterbody VAN-E15 total hardness data of 23 mg/L was used. This stream data was collected from the available data from January 1990 through February 2011.

Bacteria Criteria:
The Virginia Water Quality Standards at 9VAC25-260-170A state that the following criteria shall apply to protect primary recreational uses in surface waters:

> *E. coli* bacteria per 100 ml of water shall not exceed a monthly geometric mean of 126 n/100 ml for a minimum of four weekly samples taken during any calendar month.

d. Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Little Dark Run, is located within Section 4 of the Rappahannock River Basin. This section has no designated special standards.

16. Antidegradation (9VAC25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 based on the fact that the receiving stream has critical flows of zero and at times, the stream is comprised of only effluent. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points are equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLAs) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLAs are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a. Effluent Screening:
Effluent data obtained from the January 2009 through July 2014 DMRs was reviewed and determined to be suitable for evaluation. The following parameters were exceeded during this period:

E. coli – January 2009, August 2011;
Total Suspended Solids – March 2010;
BOD_5 – March 2010;
Ammonia (June November) – July 2010; and
Dissolved Oxygen – July 2010.

The following pollutants require a wasteload allocation analysis: Ammonia as N, Total Residual Chlorine, and Total Recoverable Zinc.

b. Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{Co\,[\,Qe + (\,f\,)(Qs\,)\,] - [\,(Cs\,)(\,f\,)(\,Qs\,)\,]}{Qe}$$

Where:
WLA = Wasteload allocation
Co = In-stream water quality criteria
Qe = Design flow
Qs = Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
f = Decimal fraction of critical flow
Cs = Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have a 7Q10 and 1Q10 of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the Co. Because there are high flow stream values (7Q10, 30Q10, 1Q10) during the period of December through May, mixing zone were determined for this timeframe. See Attachment 6 for the high flow mixing zone predictions.

c. Effluent Limitations Toxic Pollutants, Outfall 001 –

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N:

Staff reevaluated pH and temperature. Since the pH data used in the previous permit reissuance could not be documented, staff used the new effluent and stream data to determine new ammonia water quality criteria, new wasteload allocations (WLAs) and new ammonia limits (Attachment 8). DEQ guidance suggests using a sole data point of 9.0 mg/L for discharges containing domestic sewage to ensure the evaluation adequately addresses the potential for ammonia to be present in the discharge containing domestic sewage.

The Ammonia as N (Dec- May) analysis for this reissuance determined that no Ammonia effluent limits were required. However, since the wastewater treatment plant was built to meet the existing limits; the plant has been meeting the limits; and antibacksliding could be potentially violated if the limits are relaxed, staff proposes to carry forward the existing limits of 15 mg/L monthly average and 22 mg/L for weekly maximum for the season of December through May.

The Ammonia as N (June – November) analysis for this reissuance determined that the Ammonia effluent limit should be 3.1 mg/L (monthly average) and 4.5 mg/L (weekly maximum). This is slightly more restrictive than the current ammonia effluent limits of 3.5 mg/L (monthly average) and 5.1 mg/L (weekly maximum). A review of the effluent data since

January 2009 revealed that the newly proposed effluent limits would have been exceeded only once. Staff proposed to use the newly proposed ammonia effluent limits for this reissuance.

NOTE: The Environmental Protection Agency (EPA) finalized new, more stringent ammonia criteria in August 2013; possibly resulting in significant reductions in ammonia effluent limitations. It is staff's best professional judgment that incorporation of these criteria into the Virginia Water Quality Standards is forthcoming. This and many other facilities may be required to comply with new criteria during their next permit term.

2) Total Residual Chlorine:

Chlorine is used for disinfection and is potentially in the discharge. Staff calculated WLAs for TRC using current critical flows. In accordance with current DEQ guidance, staff used a default data point of 0.2 mg/L and the calculated WLAs to derive limits. A monthly average of 0.008 mg/L and a weekly average limit of 0.010 mg/L are proposed for this discharge (see Attachment 9).

3) Metals:

Staff set limits for total recoverable zinc with the permit reissuance in 1999. During the 2004 permit reissuance, staff reevaluated the limits due to operational changes at the facility. The total recoverable zinc limits were relaxed during that permit reissuance.

Staff reviewed and analyzed the total recoverable zinc data collected during the current permit term. No limit is necessary; therefore, staff proposes to remove the total recoverable zinc effluent limits and require semi-annual monitoring for this permit term. See Attachment 10 for Total Recoverable Zinc analysis and the effluent Total Recoverable Zinc data for the period of January 2009 through August 2014. Monthly total hardness monitoring will be carried forward.

d. Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), biochemical oxygen demand-5 day (BOD_5), total suspended solids (TSS), and pH limitations are proposed.

Dissolved Oxygen and BOD_5, limitations are based on the stream modeling conducted in March 1975 and are set to meet the water quality criteria (5.0 mg/L) for D.O. in the receiving stream. See Attachment 11 for stream model documentation.

It is staff's practice to equate the Total Suspended Solids limits with the BOD_5 limits. TSS limits are established to equal BOD_5 limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards (9VAC25-260-170).

e. Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients

Nonsignificant dischargers are subject to aggregate wasteload allocations for Total Nitrogen (TN), Total Phosphorus (TP), and Sediments under the Total Maximum Daily Load (TMDL) for the Chesapeake Bay. Monitoring for TN, TP and TSS is required in order to verify the aggregate wasteload allocations.

f. Effluent Limitations and Monitoring Summary:

The effluent limitations are presented in the following table. Limits were established for BOD_5, Total Suspended Solids, Ammonia as N (Seasonal limits), pH, Dissolved Oxygen, Total Residual Chlorine, and *E. Coli.*

The limit for Total Suspended Solids is based on Best Professional Judgment.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 3.785.

Sample Type and Frequency are in accordance with the recommendations in the 2014 VPDES Permit Manual.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for BOD_5 and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal.

18. Antibacksliding:

The backsliding proposed with this reissuance conforms to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, 9VAC25-31-220.L., and 40 § CFR 122.44.

The Total Recoverable Zinc limits were removed. An evaluation of the past five years of data (Attachment 10) indicated that no limit was now necessary. The revisions to the limits are allowed since the revisions comply with the water quality standards 402(o)(3) and they are consistent with antidegradation 303(d)(4)(B).

19. Effluent Limitations/Monitoring Requirements:

Design flow is 0.08 MGD.
Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH	3	NA	NA	6.0 S.U.	9.0 S.U.	1/D	Grab
BOD_5	3,5	30 mg/L 9.1 kg/day	45 mg/L 14 kg/day	NA	NA	1/W	4H-C
Total Suspended Solids (TSS)	2	30 mg/L 9.1 kg/day	45 mg/L 14 kg/day	NA	NA	1/W	4H-C
Dissolved Oxygen (DO)	3, 5	NA	NA	7.0 mg/L	NA	1/D	Grab
Total Kjeldahl Nitrogen (TKN)	6	NL mg/L	NA	NA	NA	1/YR	Grab
Ammonia, as N (Dec-May)	2	15 mg/L	22 mg/L	NA	NA	1/W	4H-C
Ammonia, as N (June-Nov)	3	3.1 mg/L	4.5 mg/L	NA	NA	1/W	4H-C
E. coli (Geometric Mean)[a]	3	126 n/100ml	NA	NA	NA	1/W	Grab
Total Residual Chlorine (after contact tank)	2, 3, 4	NA	NA	1.0 mg/L	NA	3/D at 4-hr Intervals	Grab
Total Residual Chlorine (after dechlorination)	3	0.008 mg/L	0.010 mg/L	NA	NA	3/D at 4-hr Intervals	Grab
Nitrate+Nitrite, as N	6	NL mg/L	NA	NA	NA	1/YR	Grab
Total Nitrogen[b]	6	NL mg/L	NA	NA	NA	1/YR	Calculated
Total Phosphorus	6	NL mg/L	NA	NA	NA	1/YR	Grab
Total Hardness	2	NL	NL	NA	NA	1/M	Grab
Zinc, Total Recoverable	2	NL µg/L	NL µg/L	NA	NA	1/6M	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgment
3. Water Quality Standards
4. DEQ Disinfection Guidance
5. Stream Model- Attachment 11
6. Guidance Memo No. 14-2011 –Nutrient Monitoring for "Nonsignificant" Discharges to the Chesapeake Bay Watershed

MGD = Million gallons per day.
NA = Not applicable.
NL = No limit; monitor and report.
S.U. = Standard units.
TIRE = Totalizing, indicating and recording equipment.

3D = Three times per days.
1/D = Once every day.
1/W = Once every week.
1/M = Once per month.
1/6M = Once every six months.
1/YR = Once every calendar year.

4H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 4-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of four (4) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum four (4) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by ≥10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15 minutes.

a. Samples shall be collected between 10:00 a.m. and 4:00 p.m.
b. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

20. Other Permit Requirements:

a. Part I.B. of the permit contains additional chlorine monitoring requirements, quantification levels and compliance reporting instructions.

These additional chlorine requirements are necessary per the Sewage Collection and Treatment Regulations at 9VAC25-790 and by the Water Quality Standards at 9VAC25-260-170. A minimum chlorine residual must be maintained at the exit of the chlorine contact tank to assure adequate disinfection. No more that 10% of the monthly test results for TRC at the exit of the chlorine contact tank shall be <1.0 mg/L with any TRC <0.6 mg/L considered a system failure. Monitoring at numerous STPs has concluded that a TRC residual of 1.0 mg/L is an adequate indicator of compliance with the *E. coli* criteria. *E. coli* limits are defined in this section as well as monitoring requirements to take effect should an alternate means of disinfection be used.

9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

b. Permit Section Part I.C., details the requirements of a Pretreatment Program.
The Madison WWTP is a POTW with a current design capacity of 0.08 MGD. Since this facility discharges greater than 40,000 GPD and is under the control of an inactive pretreatment program for the Town of Gordonsville Wastewater Treatment Plant (VA0021105), pretreatment program conditions in accordance with DEQ guidance are included in Part I.C of the VPDES permit to determine if a pretreatment program may be needed.

21. Other Special Conditions:

a. **95% Capacity Reopener.** The VPDES Permit Regulation at 9VAC25-31-200.B.4 requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a POTW.

b. **Indirect Dischargers.** Required by VPDES Permit Regulation, 9VAC25-31-200 B.1 and B.2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

c. **O&M Manual Requirement.** Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall maintain a current Operations and Maintenance (O&M) Manual. The permittee shall operate the treatment works in accordance with the O&M Manual and shall make the O&M Manual available to Department personnel for review upon request. Any changes in the practices and procedures followed by the permittee shall be documented in the O&M Manual within 90 days of the effective date of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.

d. **CTC, CTO Requirement.** The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.

e. **Licensed Operator Requirement.** The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200 C, and by the Board for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals Regulations (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class III operator.

f. **Reliability Class.** The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a reliability Class of II.

g. **Water Quality Criteria Reopener.** The VPDES Permit Regulation at 9VAC25-31-220 D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.

h. **Sludge Reopener.** The VPDES Permit Regulation at 9VAC25-31-220.C requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA.

i. **Sludge Use and Disposal.** The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2, and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal

practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.

j. **TMDL Reopener.** This special condition is to allow the permit to be reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

22. Permit Section Part II.

Required by VPDES Regulation 9VAC25-31-190, Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

a. Special Conditions:
The Treatment Works Closure Plan Special Condition has been removed from this permit. Since this facility is a publicly owned wastewater treatment plant, it is staff's best professional judgment that it is not necessary.

b. Monitoring and Effluent Limitations:
1) Monitoring for TN, TP, and Nitrate+Nitrite has been added to the permit in accordance with Guidance Memo No. 14-2011 –Nutrient Monitoring for "Nonsignificant" Discharges to the Chesapeake Bay Watershed.

2) The Total Residual Chlorine frequency of sampling was increased from once per day to 3 times per day in accordance with the recommendations in the 2014 VPDES Permit Manual.

3) The Total Recoverable Zinc effluent limitation was removed after a review of the effluent data indicated that an effluent limitation was no longer necessary. Total Recoverable Zinc semi-annual effluent monitoring was incorporated in the permit to monitoring zinc for this permit term.

24. Variances/Alternate Limits or Conditions:

This permit contains no variances/alternate limits or conditions.

25. Public Notice Information:

First Public Notice Date: 12/4/14 Second Public Notice Date: 12/11/14

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3925, joan.crowther@deq.virginia.gov. See Attachment 12 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

26. Additional Comments:

Previous Board Action(s): None.

Staff Comments: None.

Public Comment: No comments were received during the public notice.

Madison Wastewater Treatment Plant
Fact Sheet Attachments

Attachment	Description
1	Flow Frequency Memo dated August 25, 1998
2	Site Inspection Report dated June 14, 2007, by Wilamena Harback, DEQ-NRO Water Inspector
3	Planning Statement for Madison WWTP, dated September 11, 2014
4	Freshwater Water Quality Criteria/ Wasteload Allocated Analysis
5	Effluent pH data January 2010 through July 2014
6	Mixing Zone Prediction for Wet Season – December through May
7	Total Hardness Data January 2010 through July 2014
8	Ammonia Effluent Calculation
9	Total Chlorine Residual Calculation
10	Total Recoverable Zinc Calculation
11	Stream Model dated March 1975
12	Public Notice

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
Water Quality Assessments and Planning
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination
RSA - Madison STP - #VA0022845

TO: James C. Engbert, VRO

FROM: Paul E. Herman, P.E., WQAP

DATE: August 25, 1998

COPIES: Ron Gregory, Charles Martin, File

This memo supercedes my September 30, 1993 memo to Raymond Jay concerning the subject VPDES permit.

The RSA - Madison STP discharges to the Little Dark Run near Madison, VA. Stream flow frequencies are required at this site by the permit writer for the purpose of calculating effluent limitations for the VPDES permit.

The USGS conducted several flow measurements on the Robinson River from 1950 to 1954, 1963, and 1981 to 1984. The measurements were made at the Route 231 bridge near Criglersville, VA. The measurements made by the USGS correlated very well with the same day daily mean values from two continuous record gages; one on the Hazel River at Rixeyville, VA (#01663500) and the second on the Rapidan River near Ruckersville, VA (#01665500). The measurements and daily mean values were plotted by the USGS on a logarithmic graph and a best fit line was drawn through the data points. The required flow frequencies from the reference gages were plotted on the regression line and the associated flow frequencies at the measurement site were determined from the graphs.

The flow frequencies at the discharge point were determined by using the values at the measurement site and adjusting them by proportional drainage areas. The data for the reference gages, the measurement site and the discharge point are presented below:

Rapidan River near Ruckersville, VA (#01665500):

Drainage Area = 114 mi^2

1Q10 = 3.7 cfs	High Flow 1Q10 = 25 cfs
7Q10 = 4.4 cfs	High Flow 7Q10 = 29 cfs
30Q5 = 10 cfs	HM = 46 cfs

HF 30Q10 = 29 cfs

Hazel River at Rixeyville, VA (#01663500):

Drainage Area = 287 mi^2

1Q10 =	4.3 cfs	High Flow 1Q10 =	47 cfs
7Q10 =	5.9 cfs	High Flow 7Q10 =	56 cfs
30Q5 =	19 cfs	HM =	86 cfs

Robinson River, at Route 231, near Criglersville, VA (#01665850):

Drainage Area = 47.8 mi^2

1Q10 =	0.3 cfs	High Flow 1Q10 =	7.2 cfs
7Q10 =	0.48 cfs	High Flow 7Q10 =	9.5 cfs
30Q5 =	1.6 cfs	HM =	19 cfs

Little Dark Run at discharge point:

Drainage Area = 2.52 mi^2

				MGD
1Q10 =	0.02 cfs = 0.012926 MGD	High Flow 1Q10 =	0.38 cfs	= 0.245594
7Q10 =	0.03 cfs = 0.019389	High Flow 7Q10 =	0.50 cfs	= 0.32315
30Q5 =	0.08 cfs = 0.051704	HM =	1.0 cfs	= 0.6463

The high flow months are December through May.

Consideration should be given to the flow contributed to the Little Dark Run watershed by the Madison school discharges. This analysis does not address any discharges, withdrawals or springs which may influence the flow in the Little Dark Run upstream of the discharge point.

If there are any questions concerning this analysis, please let me know.

1.29.2004

Based on staff observations, critical flows for the summer months (June - November) have been determined to be 0.0 MGD.

4/15/09 30Q10 flows

30Q10 = 0 mgd based on drainage area

30Q10 HF = $\frac{29\ cfs}{114\ mi^2} = \frac{x}{2.52\ mi^2}$

= .64 cfs

= .41 mgd

July 3, 2007

Mr. Dudley M. Pattie
General Manager
Rapidan Service Authority
P.O. Box 148
Ruckersville, VA 22968

Re: Rapidan Service Authority (RSA) Madison POTW Inspections, Permit VA0022845

Dear Mr. Pattie:

Enclosed are copies of the technical and laboratory inspection reports generated from observations made while performing a Facility Technical Inspection at the RSA Madison POTW facility on June 14, 2007. The compliance/monitoring staff would like to thank your staff for their time and assistance during the inspection.

Summaries for both the technical and laboratory inspections are enclosed. The facility had one **Deficiency** for Total Residual Chlorine (TRC) in the laboratory inspection. Please note the requirements and recommendations addressed in the technical summary. Additional inspections may be conducted to confirm the facility is in compliance with permit requirements.

Please submit in writing a progress report to this office by **Aug 3, 2007** for the items addressed in the summary. Your response may be sent either via the US Postal Service or electronically, via E-mail. If you chose to send your response electronically, we recommend sending it as an Acrobat PDF or in a Word-compatible, write-protected format.

If you have any questions or comments concerning this report, please feel free to contact me at the Northern Virginia Regional Office at (703) 583-3909 or by E-mail at wgharback@deq.virginia.gov.

Sincerely,

Wilamena Harback
Environmental Specialist II

cc: Permits / DMR File
Compliance Manager
Compliance Auditor
Compliance Inspector
OWCP – (SGStell) EPA Copy

Summary of conditions from last inspection
(September 26, 2000)

Problem identified		Corrected	Not Corrected
1.	O&M Manual needed updating to include: • polymer feed system • soda ash or lime feed system • relocated non-potable water reuse pump • new aeration system in the aeration basins and digesters • new backup chlorine and dechlor tablet feeders • any other changes to the treatment process	[ ]	[**X**]
2.	The comminutor was offline during the last inspection until sewer line construction at Waverly Yowell School is complete. DEQ was to be notified when complete.	[**X**]	[ ]
3.	Despite RSA's previous efforts, at the time of the last inspection they were still experiencing overflows and solids loss problems as a result of I&I.	[**X**]	[ ]

Summary of conditions for current inspection

Comments:

The facility and staff should be commended on operations of the facility.

Recommendations for action:

1. Update the O&M Manual and submit a copy to DEQ upon completion.

DEQ
WATER FACILITY INSPECTION REPORT
PREFACE

VPDES/State Certification No.	(RE) Issuance Date	Amendment Date	Expiration Date
VA0022845	**March 30, 2004**		**March 29, 2009**

Facility Name	Address	Telephone Number
RSA Madison POTW	**1033 Fishback Road Madison, VA 22727**	**540-948-3149**
Owner Name	Address	Telephone Number
Rapidan Service Authority (RSA)	**P.O. Box 148 Ruckersville, VA 22968**	**540-985-7811**
Responsible Official	Title	Telephone Number
Mr. Dudley M. Pattie	**General Manager**	**540-985-7811**
Responsible Operator	Operator Cert. Class/number	Telephone Number
Edward Braley	**Class III, 1911 003552**	**540-948-3149**

TYPE OF FACILITY:

DOMESTIC				**INDUSTRIAL**			
Federal		Major		Major		Primary	
Non-federal	**X**	Minor	**X**	Minor		Secondary	

INFLUENT CHARACTERISTICS:	DESIGN:
Flow	**0.08 MGD**
Population Served	**480**
Connections Served	**170**
BOD_5 (May 23, 2007)	**225**
TSS (May 23, 2007)	**185**

EFFLUENT LIMITS: Units in mg/L unless otherwise specified.

Parameter	Min.	Avg.	Max.	Parameter	Min.	Avg.	Max.
Flow (MGD)		**0.08**		**Cl_2, Total Contact**	**1.0**		
pH (S.U.)	**6.0**		**9.0**	**Cl_2, Inst Res Max**		**0.008**	**0.010**
BOD_5		**30**	**45**	**Cl_2, Inst Tech Min**	**0.6**		
TSS		**30**	**45**	**Cu, Total Recoverable**		**NL**	**NL**
DO	**7.0**			**Ammonia (Jun-Nov)**		**3.5**	**5.1**
Total Hardness		**NL**	**NL**	**Ammonia (Dec-May)**		**14.9**	**21.8**
Zn, Total Recoverable		**234**	**234**				

Receiving Stream	**Little Dark Run**
Basin	**Rappahannock River**
Discharge Point (LAT)	**38° 22' 48" N**
Discharge Point (LONG)	**78° 14' 11" W**

VPDES NO. **VA0022845**

REV 5/00

DEQ
WATER FACILITY
INSPECTION REPORT
PART 1

Inspection date: **June 14, 2007**

Date form completed: **July 3, 2007**

Inspection by: **Wilamena Harback**

Inspection agency: **DEQ NVRO**

Time spent: **18 hours**

Announced: **No**

Reviewed by:

Scheduled: **Yes**

Present at inspection: **Wilamena Harback and Beth Biller – DEQ**
Edward Braley and staff – RSA Madison

TYPE OF FACILITY:

	Domestic	**Industrial**	
[ ] Federal	[ ] Major	[ ] Major	[ ] Primary
[**X**] Nonfederal	[**X**] Minor	[ ] Minor	[ ] Secondary

Type of inspection:

[**X**] Routine
[ ] Compliance/Assistance/Complaint
[ ] Reinspection

Date of last inspection: **September 26, 2000**
Agency: **DEQ NVRO**

Population served: approx. **480**

Connections served: approx. **170**

Last month average: (Effluent) Month/year: **April 2007**
Flow: **0.07** **MGD** pH: **7.8** **S.U.** TSS: **10.0** **mg/L**
BOD: **15** **mg/L**

Quarter average: (Effluent) **January – March 2007**
Flow: **0.07** **MGD** pH: **7.5** **S.U.** TSS: **9.2** **mg/L**
BOD: **9.3** **mg/L**

DATA VERIFIED IN PREFACE [ ] Updated [**X**] No changes

Has there been any new construction? [**X**] Yes [ ] No

If yes, were plans and specifications approved? [ ] Yes [ ] No [ ] NA

DEQ approval date:

(A) PLANT OPERATION AND MAINTENANCE

1. Class and number of licensed operators: I __ II **1** III **1** IV __ Trainee
2. Hours per day plant is manned: **8 hours/day, 7 days/week**
3. Describe adequacy of staffing. [**X**] Good [ ] Average [ ] Poor
4. Does the plant have an established program for training personnel? [**X**] Yes [ ] No
5. Describe the adequacy of the training program. [**X**] Good [ ] Average [ ] Poor
6. Are preventive maintenance tasks scheduled? [**X**]Yes [ ]No
7. Describe the adequacy of maintenance. [**X**] Good [ ] Average [ ] Poor*
8. Does the plant experience any organic/hydraulic overloading?
   If yes, identify cause and impact on plant: [ ] Yes [**X**] No
9. Any bypassing since last inspection? [ ] Yes [**X**] No
10. Is the standby electric generator operational? [**X**] Yes [ ] No* [ ] NA
11. Is the STP alarm system operational? [ ] Yes [ ] No* [**X**] NA
12. How often is the standby generator exercised? **Weekly under load**
    Power Transfer Switch? **Weekly under load**
    Alarm System? **NA**
13. When was the cross connection control device last tested on the potable water service? **8-4-06 (Clayton Pope)**
14. Is sludge being disposed in accordance with the approved sludge disposal plan?
    [**X**] Yes [ ] No [ ] NA
15. Is septage received by the facility? [ ] Yes [**X**] No
    Is septage loading controlled? [ ] Yes [**X**] No
    Are records maintained? [ ] Yes [**X**] No
16. Overall appearance of facility: [ ] Good [**X**] Average [ ] Poor

Comments:

14) Dried sludge from the drying beds is taken to the Madison County Landfill.

(B) PLANT RECORDS

1. Which of the following records does the plant maintain?

Operational Logs for each unit process	[**X**] Yes	[ ] No	[ ] NA
Instrument maintenance and calibration	[**X**] Yes	[ ] No	[ ] NA
Mechanical equipment maintenance	[**X**] Yes	[ ] No	[ ] NA
Industrial waste contribution (Municipal Facilities)	[ ] Yes	[ ] No	[**X**] NA

2. What does the operational log contain?

[**X**] Visual observations	[**X**] Flow measurement
[**X**] Laboratory results	[**X**] Process adjustments
[**X**] Control calculations	[ ] Other (specify)

Comments:

3. What do the mechanical equipment records contain?

[ ] As built plans and specs	[**X**] Spare parts inventory
[**X**] Manufacturers instructions	[**X**] Equipment/parts suppliers
[**X**] Lubrication schedules	[ ] Other (specify)

Comments:

4. What do the industrial waste contribution records contain? (Municipal Only)

[ ] Waste characteristics	[ ] Locations and discharge types
[ ] Impact on plant	[ ] Other (specify)

Comments: **NA**

5. Which of the following records are kept at the plant and available to personnel?

[**X**] Equipment maintenance records	[**X**] Operational Log
[ ] Industrial contributor records	[**X**] Instrumentation records
[**X**] Sampling and testing records	

6. Records not normally available to plant personnel and their location:
IU survey and pretreatment records kept in the main office in Ruckersville.

7. Were the records reviewed during the inspection? [**X**] Yes [ ] No

8. Are the records adequate and the O & M Manual current? [ ] Yes [**X**] No

9. Are the records maintained for the required 3-year time period? [**X**] Yes [ ] No

Comments:

8. The copy of the O & M Manual on site was not updated (nor the DEQ copy) with the new digester, polymer feed system, lime feed system, relocated non-potable water reuse pump, new aeration system in the aeration basins and digesters, new covered drying beds and the new back-up chlorine and de-chlorination tablet feeders.

(C) SAMPLING

1. Do sampling locations appear to be capable of providing representative samples? [**X**] Yes [ ] No*
2. Do sample types correspond to those required by the VPDES permit? [**X**] Yes [ ] No*
3. Do sampling frequencies correspond to those required by the VPDES permit? [**X**] Yes [ ] No*
4. Are composite samples collected in proportion to flow? [**X**] Yes [ ] No* [ ] NA
5. Are composite samples refrigerated during collection? [**X**] Yes [ ] No* [ ] NA
6. Does plant maintain required records of sampling? [**X**] Yes [ ] No*
7. Does plant run operational control tests? [**X**] Yes [ ] No

Comments:

(D) TESTING

1. Who performs the testing? [**X**] Plant [**X**] Central Lab [**X**] Commercial Lab
   Name:
   Facility - pH, DO, Cl_2 and Hardness
   RSA Gordonsville – BOD and TSS
   ESS, LTD – Ammonia and Metals

If plant performs any testing, complete 2-4.

2. What method is used for chlorine analysis? **DPD – Hach Pocket Colorimeter**
3. Does plant appear to have sufficient equipment to perform required tests? [**X**] Yes [ ] No*
4. Does testing equipment appear to be clean and/or operable? [**X**] Yes [ ] No*

Comments:

(E) FOR INDUSTRIAL FACILITIES WITH TECHNOLOGY BASED LIMITS ONLY

1. Is the production process as described in the permit application? (If no, describe changes in comments)
   [ ] Yes [ ] No [**X**] NA
2. Do products and production rates correspond as provided in the permit application? (If no, list differences)
   [ ] Yes [ ] No [**X**] NA
3. Has the State been notified of the changes and their impact on plant effluent? Date:
   [ ] Yes [ ] No* [**X**] NA

Comments:

Wastewater Treatment Description:

The Madison POTW consists of an influent manhole; a manually cleaned barscreen prior to a flow splitter; two parallel package plants, each consisting of: an aerobic sludge digestion tank, an aeration basin, and a clarifier; a gaseous chlorine feed system; a chlorine contact tank; flow measurement consisting of a Parshall Flume with an ultrasonic meter; a gaseous Sulfur Dioxide feed system; post aeration; an effluent sampling manhole; and Outfall 001 which discharges to Little Dark Run.

At the time of the inspection, hydrated lime was being added to each aeration basin at a rate of 100 pounds per day for pH control and alkalinity replacement due to nitrification. Polymer is also being added to each clarifier as necessary by flow to aid in settling.

Sludge Treatment and Disposal Methods:

Waste sludge from the clarifiers is aerobically digested in a 16,000 gallon aerated sludge tank. The tank is decanted, with the supernatant returned to the head of the plant, and then the slightly thickened sludge is applied to one of the 5 sand drying beds. When the sludge is dry, it is manually removed and trucked to the Madison landfill for disposal.

Outfall 001:

Outfall 001 discharges into Little Dark Run which is approximately four feet wide and six inches deep. The channel is rectangular with straight sides and meanders considerably. The creek bottom is almost entirely rocky. The creek was not visually checked as it could not be accessed during inspection because of the road conditions during the rain.

TABLE 1– Chemical Storage

Materials Description	Volume Stored	Spill Prevention Measures
Hydrated Lime	Up to ten 50# bags	Stored indoors.
Polymer	One 5 gallon bucket	Stored indoors in a chemical room.
Chlorine Gas	Up to six 150# cylinders	Contained in a secure building with a leak detector
Sulphur Dioxide Gas	Up to six 150# cylinders	Contained in a secure building with a leak detector

UNIT PROCESS: Screening/Comminution

1. Number of Units: Manual: **1** Mechanical: **1**

   Number in operation: Manual: **1** Mechanical: **See Comment below**

2. Bypass channel provided: [ ] Yes [**X**] No*
   Bypass channel in use: [ ] Yes [ ] No

3. Area adequately ventilated: [**X**] Yes [ ] No*

4. Alarm system for equipment failure or overloads: [ ] Yes [**X**] No*

5. Proper flow distribution between units: [ ] Yes [ ] No [**X**] NA

6. How often are units checked and cleaned? **Every 1 ½ to 2 hours**

7. Cycle of operation: **Continuous**

8. Volume of screenings removed: **5 gallons per week**

9. General condition: [ ] Good [**X**] Fair [ ] Poor

Comments:

During the inspection in 2000, the comminutor was offline until sewer construction at Waverly Yowell School was completed (due to construction debris). The construction was completed but the comminutor was never put back on line.

UNIT PROCESS: Activated Sludge Aeration

1. Number of units: **2** In operation: **2**

2. Mode of operation: **Extended Aeration**

3. Proper flow distribution between units: [**X**] Yes [ ] No* [ ] NA

4. Foam control operational: [ ] Yes [ ] No* [**X**] NA

5. Scum control operational: [ ] Yes [ ] No* [**X**] NA

6. Evidence of following problems:
   a. dead spots [ ] Yes* [**X**] No
   b. excessive foam [ ] Yes* [**X**] No
   c. poor aeration [ ] Yes* [**X**] No
   d. excessive aeration [ ] Yes* [**X**] No
   e. excessive scum [ ] Yes* [**X**] No
   f. aeration equipment malfunction [ ] Yes* [**X**] No
   g. other (identify in comments) [ ] Yes* [**X**] No

7. Mixed liquor characteristics (as available): June 10, 2007
   pH: **Train 1: 7.0 s.u. Train 2: 7.3 s.u.**
   MLSS: **Train 1: 5610 mg/L Train 2: 6130 mg/L**
   DO: **Train 1: 0.3 mg/L Train 2: 0.7 mg/L**
   Color: **Train 1 & 2: Chocolate Brown**
   Odor: **Train 1 & 2: None**

8. Return/waste sludge:
   a. Return Rate: **80%**
   b. Waste Rate: **300-400 gallons**
   c. Frequency of Wasting: **Approximately once per day (operationally dependent).**

9. Aeration system control: [ ] Time Clock [ ] Manual [**X**] Continuous [ ] Other (explain)

10. Effluent control devices working properly (oxidation ditches): [ ] Yes [ ] No* [**X**] NA

11. General condition: [**X**] Good [ ] Fair [ ] Poor

Comments:

There is currently no operational system for scum and foam control. There is evidence that one once existed. The facility should evaluate a system that could assist in scum and foam control and removal.

UNIT PROCESS: Sedimentation

[ ] Primary [**X**] Secondary [ ] Tertiary

1.	Number of units: **2**	In operation: **2**		
2.	Proper flow distribution between units:	[**X**] Yes	[ ] No*	[ ] NA
3.	Signs of short circuiting and/or overloads:	[ ] Yes	[**X**] No	
4.	Effluent weirs level:	[**X**] Yes	[ ] No*	
	Clean:	[**X**] Yes	[ ] No*	
5.	Scum collection system working properly: **(Manual)**	[**X**] Yes	[ ] No*	[ ] NA
6.	Sludge collection system working properly:	[**X**] Yes	[ ] No*	
7.	Influent, effluent baffle systems working properly:	[**X**] Yes	[ ] No*	
8.	Chemical addition:	[**X**] Yes	[ ] No	

Chemicals: **Polymer is added only at an as needed basis and the dosage is based upon the flow.**

9. Effluent characteristics: **Effluent conditions are good.**

10.	General condition:	[**X**] Good	[ ] Fair	[ ] Poor

Comments:

UNIT PROCESS: Flow Measurement

[ ] Influent [ ] Intermediate [**X**] Effluent

1. Type measuring device: **ABB Kent Taylor Doppler Meter**

2. Present reading: **59.7 GPM @ 11:52 on June 14, 2007**

3. Bypass channel: [ ] Yes [**X**] No
   Metered: [ ] Yes [ ] No

4. Return flows discharged upstream from meter: [ ] Yes [**X**] No
   Identify:

5. Device operating properly: [**X**] Yes [ ] No*

6. Date of last calibration: **8-04-06 by Clayton Pope**

7. Evidence of following problems:

   a. obstructions [ ] Yes* [**X**] No
   b. grease [ ] Yes* [**X**] No

8. General condition: [**X**] Good [ ] Fair [ ] Poor

Comments:

UNIT PROCESS: Chlorination

1. No. of chlorinators: **2** In operation: **1**
2. No. of evaporators: **0** In operation:
3. No. of chlorine contact tanks: **1** In operation: **1**
4. Proper flow distribution between units: [ ] Yes [ ] No* [**X**] NA
5. How is chlorine introduced into the wastewater?
   [ ] Perforated diffusers
   [**X**] Injector with single entry point
   [ ] Other
6. Chlorine residual in basin effluent: **1.23 mg/L @ 11:23 on June 14, 2007**
7. Applied chlorine dosage: **~5 lbs/day**
8. Contact basins adequately baffled: [**X**] Yes [ ] No*
9. Adequate ventilation:
   a. cylinder storage area [**X**] Yes [ ] No*
   b. equipment room [**X**] Yes [ ] No*
10. Proper safety precautions used: [**X**] Yes [ ] No*
11. General condition: [**X**] Good [ ] Fair [ ] Poor

Comments:

- **The facility uses 150 pound chlorine cylinders with plant water for dilution but has the ability to use town water as a back-up.**
- **There is a chlorine tablet feeder back-up system in place to use in case there are any problems with the current chlorination system.**
- **There is a leak detection system but it is currently under repair as both the chlorine and sulfur dioxide systems were struck by lightning.**
- **The facility also documents in the chlorine building how much chlorine is used each day (daily log).**

UNIT PROCESS: Dechlorination

1.	Chemical used:	[**X**] Sulfur Dioxide	[ ] Bisulfite	[ ] Other
2.	No. of sulfonators:	**2**	In operation: **1**	
3.	No. of evaporators:	**0**	In operation:	
4.	No. of chemical feeders:	**2**	In operation: **1**	
5.	No. of contact tanks:	**1**	In operation: **1**	
6.	Proper flow distribution between units:	[ ] Yes	[ ] No*	[**X**] NA

7. How is chemical introduced into the wastewater?
   [ ] Perforated diffusers
   [**X**] Injector with single entry point
   [ ] Other

8.	Control system operational:	[**X**] Yes	[ ] No*	
	a. residual analyzers:	[**X**] Yes	[ ] No*	
	b. system adjusted:	[ ] Automatic	[**X**] Manual	[ ] Other:
9.	Applied dechlorination dose:	**12 lbs/day**		
10.	Chlorine residual in basin effluent:	**0.00 mg/L @ 11:30 on June 14, 2007**		
11.	Contact basins adequately baffled:	[**X**] Yes	[ ] No*	[ ] NA
12.	Adequate ventilation:			
a.	cylinder storage area:	[**X**] Yes	[ ] No*	
b.	equipment room:	[**X**] Yes	[ ] No*	
13.	Proper safety precautions used:	[**X**] Yes	[ ] No*	
14.	General condition:	[**X**] Good	[ ] Fair	[ ] Poor

Comments:

- **The facility uses 150 pound sulfur dioxide cylinders with plant water for dilution but has the ability to use town water as a back-up.**
- **There is a bisulfate tablet feeder back-up system in place to use in case there are any problems with the current de-chlorination system.**
- **There is a leak detection system but it is currently under repair as both the chlorine and sulfur dioxide systems were struck by lightning.**
- **The facility also documents in the sulfur dioxide building how much sulfur dioxide is used each day (daily log).**

UNIT PROCESS: Post Aeration

1. Number of units: **1** In operation: **1**

2. Proper flow distribution between units: [ ] Yes [ ] No* [**X**] NA

3. Evidence of following problems:
   a. dead spots [ ] Yes* [**X**] No
   b. excessive foam [ ] Yes* [**X**] No
   c. poor aeration [ ] Yes* [**X**] No
   d. mechanical equipment failure [ ] Yes* [**X**] No [ ] NA

4. How is the aerator controlled? [ ] Time clock [ ] Manual [**X**] Continuous [ ] Other* [ ] NA

5. What is the current operating schedule? **Continuous**

6. Step weirs level: [ ] Yes [ ] No [**X**] NA

7. Effluent D.O. level: **7.77 mg/L @ 11:20 on June 14, 2007**

8. General condition: [**X**] Good [ ] Fair [ ] Poor

Comments:

The post aeration system was rebuilt in March 2000 and the reuse pump was relocated at the same time.

UNIT PROCESS: Effluent/Plant Outfall

1. Type Outfall [**X**] Shore based [ ] Submerged
2. Type if shore based: [ ] Wingwall [**X**] Headwall [ ] Rip Rap
3. Flapper valve: [ ] Yes [**X**] No [ ] NA
4. Erosion of bank: [ ] Yes [ ] No [ ] NA
5. Effluent plume visible? [ ] Yes* [ ] No
6. Condition of outfall and supporting structures: [ ] Good [ ] Fair [ ] Poor*
7. Final effluent, evidence of following problems:
   a. oil sheen [ ] Yes* [ ] No
   b. grease [ ] Yes* [ ] No
   c. sludge bar [ ] Yes* [ ] No
   d. turbid effluent [ ] Yes* [ ] No
   e. visible foam [ ] Yes* [ ] No
   f. unusual color [ ] Yes* [ ] No

Comments:

4.-7. Due to the weather conditions (raining, slippery and very muddy), the outfall could not be safely accessed.

UNIT PROCESS: Aerobic Digestion

1. Number of units:	**3**		In operation:	**3**
2. Type of sludge treated		[ ] Primary	[**X**] WAS	[ ] Other
3. Frequency of sludge application to digestors:	**Several times per month depending upon flow and the level in the waste holding tanks.**			
4. Supernatant return rate:	**Variable**			
5. pH adjustment provided:		[ ] Yes	[**X**] No	
Utilized:		[ ] Yes	[ ] No	[**X**] NA
6. Tank contents well-mixed and relatively free of odors:			[**X**] Yes	[ ] No*
7. If diffused aeration is used, do diffusers require frequent cleaning?		[ ] Yes	[**X**] No	[ ] NA
8. Location of supernatant return:		[**X**] Head	[ ] Primary	[ ] Other
9. Process control testing:				
a. reduction of volatile solids		[**X**] Yes	[ ] No	
b. pH		[ ] Yes	[**X**] No	
c. alkalinity		[ ] Yes	[**X**] No	
d. dissolved oxygen		[ ] Yes	[**X**] No	
10. Foaming problem present:		[ ] Yes*	[**X**] No	
11. Signs of short-circuiting or overloads:		[ ] Yes*	[**X**] No	
12. General condition:		[**X**] Good	[ ] Fair	[ ] Poor

Comments:

There are the two original digesters that are part of the two parallel package plants. These are now used as a combination waste holding tanks and starting of the digestion process. The sludge is then pumped from these two tanks into the new separate digester (see photo #8). The new digester was installed and put into operation on March 14, 2003.

UNIT PROCESS: Drying Beds

1. Number of units: **5** In operation: **4**
2. Cover in good condition: [**X**] Yes [ ] No* [ ] NA
3. Typical sand depth in beds: **8-10 inches**
4. Typical drying time: **weather dependent, ~ every 2-3 months**
5. Frequency of usage: **1 ½ - 2 times per month**
6. Underflow recycle location: **headworks**
7. Sludge distributed evenly across bed(s): [**X**] Yes [ ] No*
8. Following problems noted:

a. odors	[ ] Yes*	[**X**] No
b. flies	[ ] Yes*	[**X**] No
c. weed growth	[ ] Yes*	[**X**] No
d. leakage from bed(s)	[ ] Yes*	[**X**] No

9. If the facility does not have an approved sludge plan, what is the current method of sludge disposal?
   The facility has an approved plan to dispose in the Madison County Landfill.
10. General condition: [**X**] Good [ ] Fair [ ] Poor

Comments:

- **One sludge pump, rated at 200 GPM is used to transfer sludge from the digesters to the drying beds.**
- **The facility added another covered building that contains an additional three drying beds.**

LABORATORY INSPECTION REPORT SUMMARY

FACILITY NAME: RSA Madison POTW	FACILITY NO: VA0022845	INSPECTION DATE: June 14, 2007
(X) Deficiencies	( ) No Deficiencies	

LABORATORY RECORDS

The Laboratory Records section had **No Deficiencies** noted during the inspection.

GENERAL SAMPLING AND ANALYSIS

The General Sampling and Analysis section had **No Deficiencies** noted during the inspection.

LABORATORY EQUIPMENT

The Laboratory Equipment section had **No Deficiencies** noted during the inspection.

INDIVIDUAL PARAMETERS

pH

The analysis for the parameter of pH had **No Deficiencies** noted during the inspection.

DO

The analysis for the parameter of Dissolved Oxygen (DO) had **No Deficiencies** noted during the inspection.

Chlorine

The analysis for the parameter of Chlorine had **Deficiencies** noted during the inspection.

1. Annual DPD check was last performed on 01/17/06.

COMMENTS

The facility staff should check the DEQ website at http://www.deq.state.va.us/vpdes/checklist.htmo and download the most recent inspection check sheets to keep up to date with changes in minimum laboratory requirements.

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
LABORATORY INSPECTION REPORT

10/01

FACILITY NO:	INSPECTION DATE:	PREVIOUS INSPECTION:	PREVIOUS EVALUATION:	TIME SPENT:
VA0022845	June 14, 2007	September 26, 2000	Deficiencies	10

NAME/ADDRESS OF FACILITY:	FACILITY CLASS:	FACILITY TYPE:	UNANNOUNCED INSPECTION?
RSA Madison POTW 1033 Fishback Road Madison, VA 22727	( ) MAJOR (X) MINOR ( ) SMALL ( ) VPA/NDC	(X) MUNICIPAL ( ) INDUSTRIAL ( ) FEDERAL ( ) COMMERCIAL LAB	(X) YES ( ) NO **FY-SCHEDULED INSPECTION?** (X) YES ( ) NO

INSPECTOR(S):	REVIEWERS:	PRESENT AT INSPECTION:
Wilamena Harback and Beth Biller		Edward Braley

LABORATORY EVALUATION	DEFICIENCIES? Yes	No
LABORATORY RECORDS		X
GENERAL SAMPLING & ANALYSIS		X
LABORATORY EQUIPMENT		X
DISSOLVED OXYGEN ANALYSIS PROCEDURES		X
pH ANALYSIS PROCEDURES		X
TOTAL RESIDUAL CHLORINE ANALYSIS PROCEDURES	X	

QUALITY ASSURANCE/QUALITY CONTROL

Y/N	QUALITY ASSURANCE METHOD	PARAMETERS	FREQUENCY
	REPLICATE SAMPLES		
	SPIKED SAMPLES		
Y	STANDARD SAMPLES	pH	Daily with use
	SPLIT SAMPLES		
	SAMPLE BLANKS		
N	OTHER		
N	EPA-DMR QA DATA?	RATING: ( ) No Deficiency ( ) Deficiency ( ) NA	
N	QC SAMPLES PROVIDED?	RATING: ( ) No Deficiency ( ) Deficiency ( ) NA	

FACILITY #: **VA0022845**

LABORATORY RECORDS SECTION

LABORATORY RECORDS INCLUDE THE FOLLOWING:

X	SAMPLING DATE	X	ANALYSIS DATE		CONT MONITORING CHART
X	SAMPLING TIME	X	ANALYSIS TIME	X	INSTRUMENT CALIBRATION
X	SAMPLE LOCATION	X	TEST METHOD	X	INSTRUMENT MAINTENANCE
					CERTIFICATE OF ANALYSIS

WRITTEN INSTRUCTIONS INCLUDE THE FOLLOWING:

X	SAMPLING SCHEDULES	X	CALCULATIONS	X	ANALYSIS PROCEDURES

	YES	NO	N/A
DO ALL ANALYSTS INITIAL THEIR WORK?	X		
DO BENCH SHEETS INCLUDE ALL INFORMATION NECESSARY TO DETERMINE RESULTS?	X		
IS THE DMR COMPLETE AND CORRECT? MONTH(S) REVIEWED: **January – April 2007**	X		
ARE ALL MONITORING VALUES REQUIRED BY THE PERMIT REPORTED?	X		

GENERAL SAMPLING AND ANALYSIS SECTION

	YES	NO	N/A
ARE SAMPLE LOCATION(S) ACCORDING TO PERMIT REQUIREMENTS?	X		
ARE SAMPLE COLLECTION PROCEDURES APPROPRIATE?	X		
IS SAMPLE EQUIPMENT CONDITION ADEQUATE?	X		
IS FLOW MEASUREMENT ACCORDING TO PERMIT REQUIREMENTS?	X		
ARE COMPOSITE SAMPLES REPRESENTATIVE OF FLOW?	X		
ARE SAMPLE HOLDING TIMES AND PRESERVATION ADEQUATE?	X		
IF ANALYSIS IS PERFORMED AT ANOTHER LOCATION, ARE SHIPPING PROCEDURES ADEQUATE? LIST PARAMETERS AND NAME & ADDRESS OF LAB: **RSA Gordonsville (VA0021105) Lab – BOD and TSS** **ESS, Ltd., Culpeper, VA – Ammonia and Metals**	X		

LABORATORY EQUIPMENT SECTION

	YES	NO	N/A
IS LABORATORY EQUIPMENT IN PROPER OPERATING RANGE?	X		
ARE ANNUAL THERMOMETER CALIBRATION(S) ADEQUATE?	X		
IS THE LABORATORY GRADE WATER SUPPLY ADEQUATE?			X
ARE ANALYTICAL BALANCE(S) ADEQUATE?			X

ANALYST:	**Edward Braley**	VPDES NO	**VA0022845**

Parameter: Hydrogen Ion (pH)
Method: Electrometric
08/06

X	18th EDITION STANDARD METHODS-4500-H-B
	EPA METHODS FOR CHEMICAL ANALYSIS-150.1
	ASTM-D1293-84(90)(A or B)
	USGS-METHODS IN WATER AND FLUVIAL SEDIMENTS-I-1586-85

		Y	N
1)	Is the electrode in good condition (no chloride precipitate, etc.)? [SM-2.b/c and 5.b; 150.1-4.3/Permit]	X	
2)	Is electrode storage solution in accordance with manufacturer's instructions? [Mfr.]	X	
3)	Is meter calibrated on at least a daily basis? [SM-4.a; 150.1-8.1]	X	
4)	Are two buffers which bracket the anticipated range of the sample used to calibrate the meter? (For meters not capable of performing a two point calibration is a second buffer which brackets the sample pH analyzed and found to be within ±0.1 SU of the expected value? [SM-2.a; 150.1-7.2]	X	
5)	Is meter calibration documented? [Permit]	X	
6)	Does meter read within 0.1 SU for the pH of the second buffer solution? [SM-4.a/5.b; 150.1-7.2.1]	X	
7)	After calibration, is a buffer of 7 SU analyzed as a check sample to verify that calibration is correct? Agreement should by within ± 0.1 SU. [Permit]	X	
8)	Do the buffer solutions appear to be free of contamination or growths? [SM-3.a; Permit]	X	
9)	Are buffer solutions within their listed shelf life or have they been prepared within the last 4 weeks? [SM-3.a; 150.1-6.1.1]	X	
10)	Is the cap or sleeve covering the access hole on the reference electrode removed when measuring pH? [Mfr.]	X	
11)	Is the temperature of buffer solutions and samples measured prior to testing? [SM-1.a; 150.1-9.1]	X	
12)	For meters with ATC that also have temperature display, was the thermometer calibrated annually?	X	
13)	Was the electrode rinsed between solutions? [SM-4.a; 150.1-8.4]	X	
14)	Was the electrode blotted dry between solutions (disregard if rinse is next solution)? [SM-4.a; 150.1-8.4]	X	
15)	Is the sample stirred gently at a constant speed during measurement? [SM-4.b; 150.1-8.4]	X	
16)	Does the meter hold a steady reading after reaching equilibrium? [SM-4.b/5 ;150.1-8.4]	X	

COMMENTS:	• **The facility uses a HACH Sension 3** • **USA Bluebook buffers 4.0 (exp. 03/08), 7.0 (exp 03/08) and 10.0 (exp 04/08)** • **The NIST verification was completed on 8/6/06.**
PROBLEMS:	**No problems discussed nor observed.**

ANALYST:	**Edward Braley**	VPDES NO.	**VA0022845**

Parameter: Dissolved Oxygen
Method: Electrode
03/01

METHOD OF ANALYSIS:

X	18th EDITION OF STANDARD METHODS-4500-O G
	ASTM-D-888-92(B)
	EPA METHODS FOR CHEMICAL ANALYSIS-360.1
	USGS-METHODS IN WATER AND FLUVIAL SEDIMENTS-I-1576-78

		Y	N
1)	If samples are collected, is collection carried out with a minimum of turbulence and air bubble formation? [SM4500-O B.3; 360.1-3.1]	**In Situ**	
2)	If samples are collected, is the sample bottle allowed to overflow several times its volume? [SM4500-O B.3; 360.1-3.1]	**In Situ**	
3)	Are meter and electrode operable and providing consistent readings? [Permit]	**X**	
4)	Is membrane in good condition without trapped air bubbles? [SM 4500-O G.3.b]	**X**	
5)	Is correct filling solution used in electrode? [Mfr.]	**X**	
6)	Is meter calibrated before use or at least daily? [Mfr.]	**X**	
7)	Is calibration procedure performed according to manufacturer's instructions? [Mfr.]	**X**	
8)	Are water droplets shaken off the membrane prior to calibration? [Mfr.]	**X**	
9)	Is sample stirred during analysis? [Mfr.]	**In Situ**	
10)	Is the sample analysis procedure performed according to manufacturer's instructions? [Mfr.]	**X**	
11)	Is meter stabilized before reading D.O.? [Mfr.]	**X**	
12)	Is electrode stored according to manufacturer's instructions? [Mfr.]	**X**	

COMMENTS:	• **The facility uses a YSI 550 A** • **The NIST verification was completed on 8/6/06.**
PROBLEMS:	**No problems discussed nor observed.**

ANALYST:	**Edward Braley**	VPDES NO	**VA0022845**

Parameter: Total Residual Chlorine
Method: DPD Colorimetric (HACH Pocket Colorimeter™)
04/02

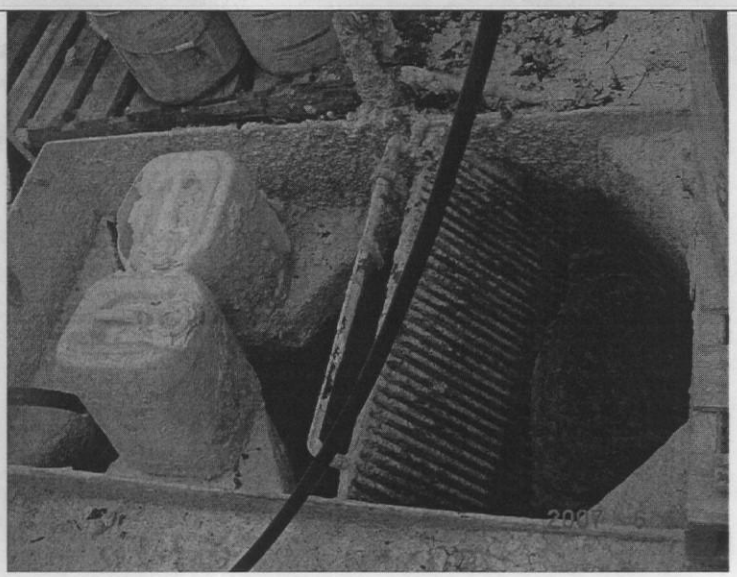
METHOD OF ANALYSIS:

X	MANUFACTURER'S INSTRUCTIONS (HACH METHOD 8167)

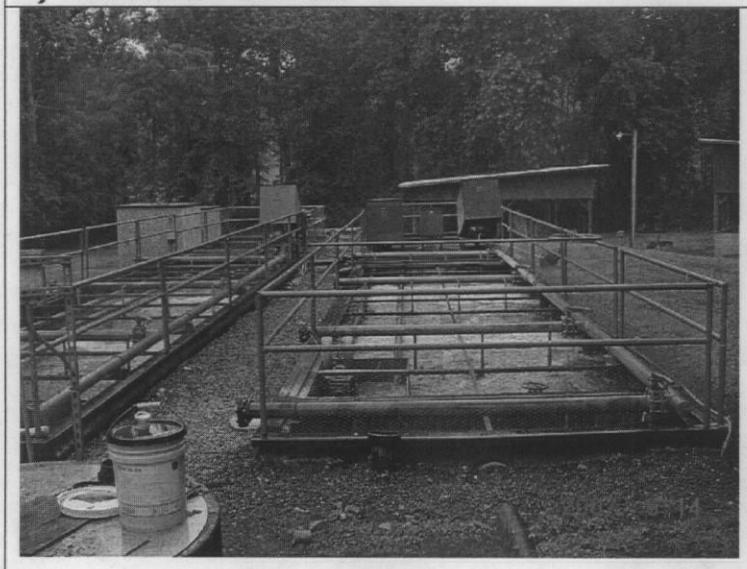
		Y	N
1)	Are the DPD PermaChem® Powder Pillows stored in a cool, dry place? [Mfr.]	X	
2)	Are the pillows within the manufacturer's expiration date? [Permit]	X	
3)	Has buffering capability of DPD pillows been checked annually? (Pillows should adjust sample pH to between 6 and 7) [Permit]		X
4)	When pH adjustment is required, is H_2SO_4 or NaOH used? [11.3.1]	X	
5)	Are cells clean and in good condition? [Permit]	X	
6)	Is the low range (0.01-mg/L resolution) used for samples containing residuals from 0-2.00 mg/L? [Mfr.]	X	
7)	Is the 10-mL cell (2.5-cm diameter) used for samples from 0-2.00 mg/L? [Mfr.]	X	
8)	Is the meter zeroed correctly by using sample as blank for the cell used? [Mfr.]	X	
9)	Is the instrument cap placed correctly on the meter body when the meter is zeroed and when the sample is analyzed? [Mfr.]	X	
10)	Is the DPD Total Chlorine PermaChem® Powder Pillow mixed into the sample? [11.1]	X	
11)	Is the analysis made at least three minutes but not more than six minutes after PermaChem® Powder Pillow addition? [11.2]	X	
12)	If read-out is flashing [2.20], is sample diluted correctly, then reanalyzed? [1.2 & 2.0]	X	
13)	When instrument was new to lab, was instrument calibration verified by analyzing a Quality Control Sample (i.e. Spec-check™, alternate source standard) prior to any data being reported? [Permit]	X	
14)	Is a Quality Control Sample (i.e. Spec- check™, alternate source standard) analyzed quarterly? [9.2.3]	X	

COMMENTS:	• **The facility uses a HACH Pocket Colorimeter.** • **The NIST verification was completed on 8/6/06.**
PROBLEMS:	**3) Annual DPD check last performed on 01/17/06.**

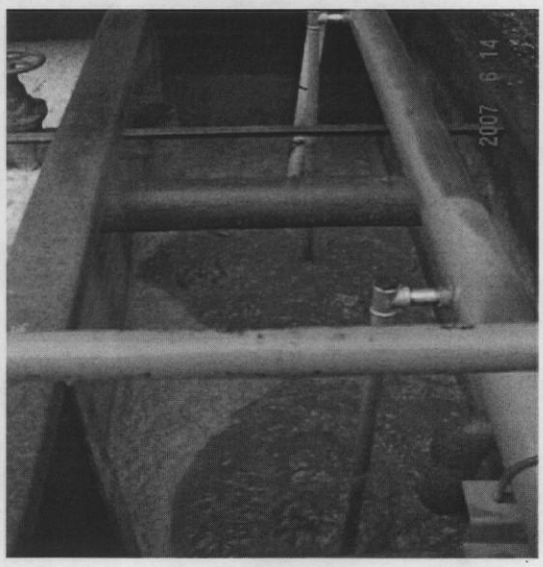
1) Two influent channels



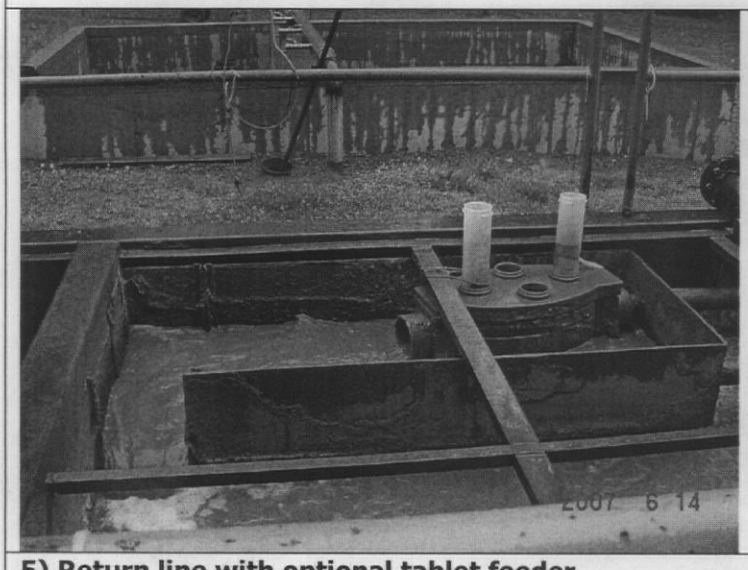
2) Manual bar screen with lime addition



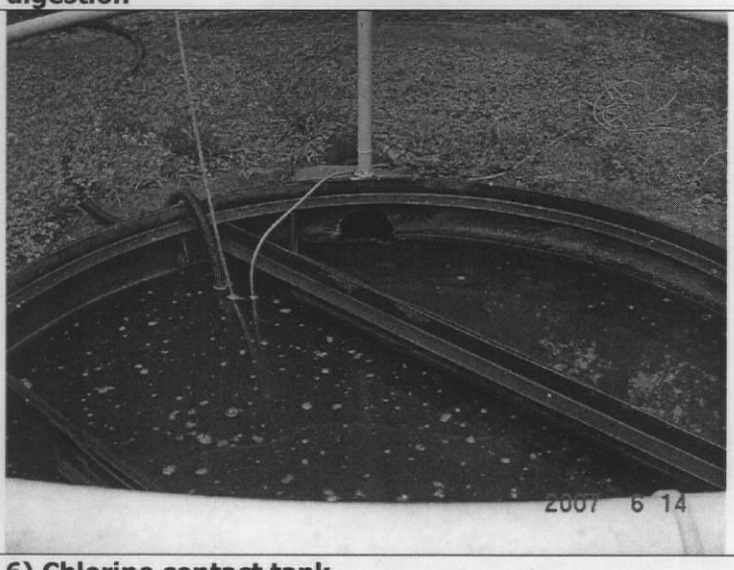
3) Parallel package plants



4) Current waste holding (original digesters) pre-digestion

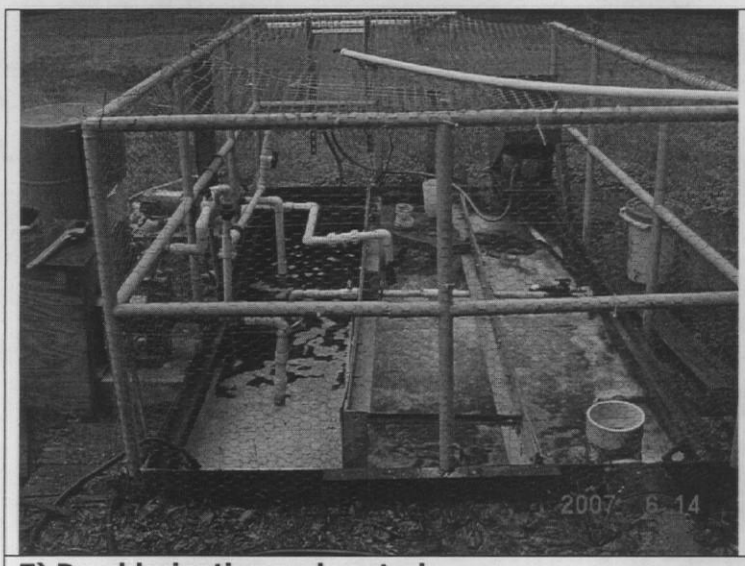


5) Return line with optional tablet feeder



6) Chlorine contact tank

RSA Madison POTW Site Inspection Photos by: Beth Biller Layout by: Wilamena Harback	VA0022845 June 14, 2007 Page 1 of 2

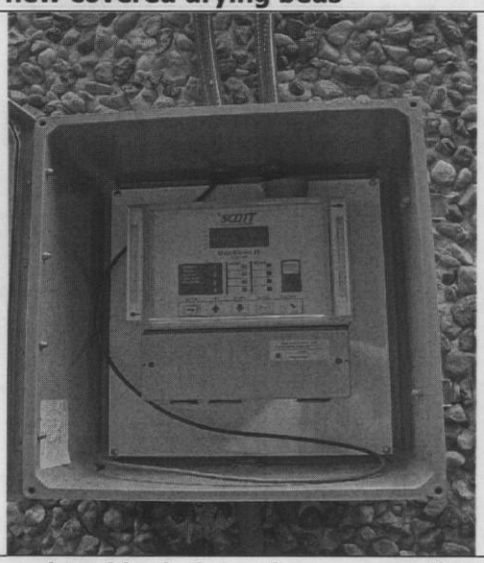


7) De-chlorination and post-air

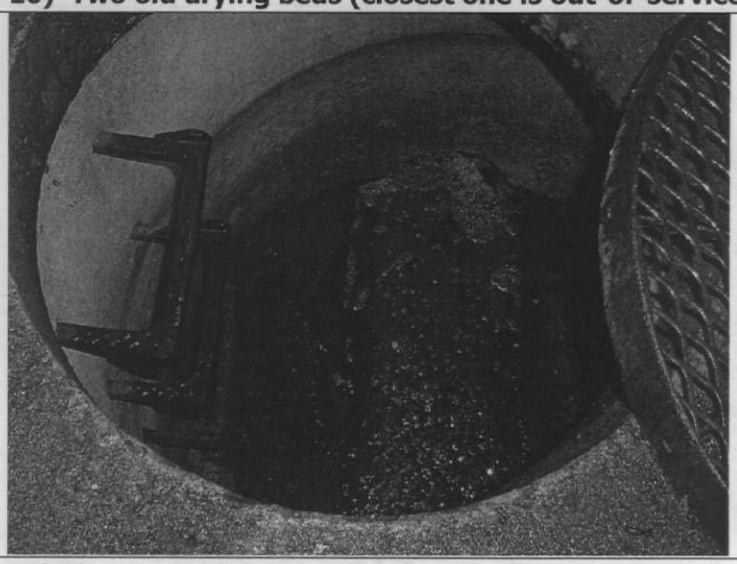
8) New digester

9) Three new covered drying beds

10) Two old drying beds (closest one is out-of-service)



11) New updated leak detection system (both chlorine and de-chlorination)



12) Flow to outfall (sampling location)

RSA Madison POTW Site Inspection Photos by: Beth Biller Layout by: Wilamena Harback	VA0022845 June 14, 2007 Page 2 of 2

To:	Jennifer Carlson
From:	Joan Crowther
Date:	September 11, 2014
Subject:	Planning Statement for the Town of Madison WWTP
Permit Number:	VA0022845

Information for Outfall 001:

Discharge Type:	Municipal
Discharge Flow:	0.08 MGD
Receiving Stream:	Little Dark Run
Latitude / Longitude:	38°22'48" 78°14'11"
Rivermile:	2.12
Streamcode:	3-LDR
Waterbody:	VAN-E15R
Water Quality Standards:	Rappahannock River: Section 4, Class III, Special Standards none
Drainage Area:	2.5 sq.mi.

1. Please provide water quality monitoring information for the receiving stream segment. If there is not monitoring information for the receiving stream segment, please provide information on the nearest downstream monitoring station, including how far downstream the monitoring station is from the outfall.

   This facility discharges into Little Dark Run. The nearest downstream DEQ ambient monitoring station is 3-LDR000.70, located at the Route 680 bridge crossing, approximately 1.4 miles downstream of Outfall 001. The following is the water quality summary for Little Dark Run, as taken from the 2012 Integrated Report:

   Class III, Section 4.

   DEQ monitoring station located in this segment of Little Dark Run:
   - *DEQ ambient monitoring station 3-LDR000.70, at Route 680.*

   E. coli monitoring finds a bacterial impairment, resulting in an impaired classification for the recreation use. A bacteria TMDL for the Little Dark Run watershed was completed and approved by U.S. EPA on 12/12/2005. The aquatic life, fish consumption and wildlife uses are considered fully supporting.

2. Does this facility discharge to a stream segment on the 303(d) list? If yes, please fill out Table A.

   Yes.

Table A. 303(d) Impairment and TMDL information for the receiving stream segment

Waterbody Name	Impaired Use	Cause	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the 2012 Integrated Report						
Little Dark Run	Recreation	*E. coli*	Robinson River Bacteria 12/12/2005	1.39E+11 cfu/year *E. coli*	126 cfu/100ml *E. coli* --- 0.08 MGD	TMDL modified 04/29/2009

3. Are there any downstream 303(d) listed impairments that are relevant to this discharge? If yes, please fill out Table B.

   Yes.

Table B. Information on Downstream 303(d) Impairments and TMDLs

Waterbody Name	Impaired Use	Cause	Distance From Outfall	TMDL completed	WLA	Basis for WLA	TMDL Schedule
Impairment Information in the 2012 Integrated Report							
Rapidan River	Fish Consumption	Mercury	45 miles	No	---	---	2022

4. Is there monitoring or other conditions that Planning/Assessment needs in the permit?

   The tidal Rappahannock River, which is located approximately 70 miles downstream of this facility, is listed with a PCB impairment. In support for the PCB TMDL that is scheduled for development by 2016 for the tidal Rappahannock River, this facility is a candidate for low-level PCB monitoring, based upon its designation as a minor municipal facility. Low-level PCB analysis uses EPA Method 1668, which is capable of detecting low-level concentrations for all 209 PCB congeners. DEQ staff has concluded that low-level PCB monitoring is not warranted for this facility, as it is a small wastewater treatment facility (<0.1 MGD). Based upon this information, this facility will not be requested to monitor for low-level PCBs.

   There is a completed downstream TMDL for the aquatic life use impairment for the Chesapeake Bay. However, the Bay TMDL and the WLAs contained within the TMDL are not addressed in this planning statement.

5. Fact Sheet Requirements – Please provide information regarding any drinking water intakes located within a 5 mile radius of the discharge point.

   There are no public water supply intakes located within 5 miles of this discharge.

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Madison WWTP Permit No.: VA0022845

Receiving Stream: Little Dark Run Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information		Stream Flows		Mixing Information		Effluent Information	
Mean Hardness (as CaCO3) =	23 mg/L	1Q10 (Annual) =	0 MGD	Annual - 1Q10 Mix =	0 %	Mean Hardness (as CaCO3) =	224 mg/L
90% Temperature (Annual) =	24 deg C	7Q10 (Annual) =	0 MGD	- 7Q10 Mix =	0 %	90% Temp (Annual) =	25 deg C
90% Temperature (Wet season) =	13.4 deg C	30Q10 (Annual) =	0 MGD	- 30Q10 Mix =	0 %	90% Temp (Wet season) =	15 deg C
90% Maximum pH =	7.6 SU	1Q10 (Wet season) =	0.25 MGD	Wet Season - 1Q10 Mix =	100 %	90% Maximum pH =	7.5 SU
10% Maximum pH =	6.7 SU	30Q10 (Wet season)	0.41 MGD	- 30Q10 Mix =	100 %	10% Maximum pH =	6.8 SU
Tier Designation (1 or 2) =	1	30Q5 =	0.05 MGD			Discharge Flow =	0.08 MGD
Public Water Supply (PWS) Y/N? =	n	Harmonic Mean =	0.65 MGD				
Trout Present Y/N? =	n						
Early Life Stages Present Y/N? =	y						

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	--	--	na	9.9E+02	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
Acrolein	0	--	--	na	9.3E+00	--	--	na	1.5E+01	--	--	--	--	--	--	--	--	--	--	na	1.5E+01
Acrylonitrile[C]	0	--	--	na	2.5E+00	--	--	na	2.3E+01	--	--	--	--	--	--	--	--	--	--	na	2.3E+01
Aldrin [C]	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	4.6E-03	--	--	--	--	--	--	--	--	3.0E+00	--	na	4.6E-03
Ammonia-N (mg/l) (Yearly)	0	1.99E+01	2.22E+00	na	--	1.99E+01	2.22E+00	na	--	--	--	--	--	--	--	--	--	1.99E+01	2.22E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	1.78E+01	4.05E+00	na	--	7.33E+01	2.48E+01	na	--	--	--	--	--	--	--	--	--	7.33E+01	2.48E+01	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	6.5E+04	--	--	--	--	--	--	--	--	--	--	na	6.5E+04
Antimony	0	--	--	na	6.4E+02	--	--	na	1.0E+03	--	--	--	--	--	--	--	--	--	--	na	1.0E+03
Arsenic	o	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene [C]	0	--	--	na	5.1E+02	--	--	na	4.7E+03	--	--	--	--	--	--	--	--	--	--	na	4.7E+03
Benzidine[C]	0	--	--	na	2.0E-03	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Benzo (a) anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.6E+00	--	--	--	--	--	--	--	--	--	--	na	1.6E+00
Benzo (b) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.6E+00	--	--	--	--	--	--	--	--	--	--	na	1.6E+00
Benzo (k) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	1.6E+00	--	--	--	--	--	--	--	--	--	--	na	1.6E+00
Benzo (a) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.6E+00	--	--	--	--	--	--	--	--	--	--	na	1.6E+00
Bis2-Chloroethyl Ether[C]	0	--	--	na	5.3E+00	--	--	na	4.8E+01	--	--	--	--	--	--	--	--	--	--	na	4.8E+01
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	1.1E+05	--	--	--	--	--	--	--	--	--	--	na	1.1E+05
Bis 2-Ethylhexyl Phthalate[C]	0	--	--	na	2.2E+01	--	--	na	2.0E+02	--	--	--	--	--	--	--	--	--	--	na	2.0E+02
Bromoform [C]	0	--	--	na	1.4E+03	--	--	na	1.3E+04	--	--	--	--	--	--	--	--	--	--	na	1.3E+04
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	3.1E+03	--	--	--	--	--	--	--	--	--	--	na	3.1E+03
Cadmium	0	9.7E+00	2.1E+00	na	--	9.7E+00	2.1E+00	na	--	--	--	--	--	--	--	--	--	9.7E+00	2.1E+00	na	--
Carbon Tetrachloride [C]	0	--	--	na	1.6E+01	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Chlordane [C]	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	7.4E-02	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	7.4E-02
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	1.2E+03	--	--	--	--	--	--	--	--	--	--	na	1.2E+03
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.8E+04	--	--	--	--	--	--	--	--	--	--	na	1.8E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	--	--	na	2.4E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	1.1E+03	1.4E+02	na	--	1.1E+03	1.4E+02	na	--	--	--	--	--	--	--	--	--	1.1E+03	1.4E+02	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene [C]	0	--	--	na	1.8E-02	--	--	na	1.6E-01	--	--	--	--	--	--	--	--	--	--	na	1.6E-01
Copper	0	2.9E+01	1.8E+01	na	--	2.9E+01	1.8E+01	na	--	--	--	--	--	--	--	--	--	2.9E+01	1.8E+01	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	2.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	2.6E+04
DDD [C]	0	--	--	na	3.1E-03	--	--	na	2.8E-02	--	--	--	--	--	--	--	--	--	--	na	2.8E-02
DDE [C]	0	--	--	na	2.2E-03	--	--	na	2.0E-02	--	--	--	--	--	--	--	--	--	--	na	2.0E-02
DDT [C]	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.0E-02	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	2.0E-02
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene [C]	0	--	--	na	1.8E-01	--	--	na	1.6E+00	--	--	--	--	--	--	--	--	--	--	na	1.6E+00
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	3.1E+02	--	--	--	--	--	--	--	--	--	--	na	3.1E+02
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	2.6E+00	--	--	--	--	--	--	--	--	--	--	na	2.6E+00
Dichlorobromomethane [C]	0	--	--	na	1.7E+02	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
1,2-Dichloroethane [C]	0	--	--	na	3.7E+02	--	--	na	3.4E+03	--	--	--	--	--	--	--	--	--	--	na	3.4E+03
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	4.7E+02	--	--	--	--	--	--	--	--	--	--	na	4.7E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
1,3-Dichloropropene [C]	0	--	--	na	2.1E+02	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
Dieldrin [C]	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	4.9E-03	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	4.9E-03
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	7.2E+04	--	--	--	--	--	--	--	--	--	--	na	7.2E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.8E+06	--	--	--	--	--	--	--	--	--	--	na	1.8E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	7.3E+03	--	--	--	--	--	--	--	--	--	--	na	7.3E+03
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	8.6E+03	--	--	--	--	--	--	--	--	--	--	na	8.6E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	4.6E+02	--	--	--	--	--	--	--	--	--	--	na	4.6E+02
2,4-Dinitrotoluene [C]	0	--	--	na	3.4E+01	--	--	na	3.1E+02	--	--	--	--	--	--	--	--	--	--	na	3.1E+02
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	8.3E-08	--	--	--	--	--	--	--	--	--	--	na	8.3E-08
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	1.8E+01	--	--	--	--	--	--	--	--	--	--	na	1.8E+01
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	1.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	1.4E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	1.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	1.4E+02
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	1.4E+02	--	--	--	--	--	--	--	--	--	--	na	1.4E+02
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	9.8E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	9.8E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	3.4E+03	--	--	--	--	--	--	--	--	--	--	na	3.4E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	2.3E+02	--	--	--	--	--	--	--	--	--	--	na	2.3E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	8.6E+03	--	--	--	--	--	--	--	--	--	--	na	8.6E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor [C]	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.2E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.2E-03
Heptachlor Epoxide[C]	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.6E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.6E-03
Hexachlorobenzene[C]	0	--	--	na	2.9E-03	--	--	na	2.6E-02	--	--	--	--	--	--	--	--	--	--	na	2.6E-02
Hexachlorobutadiene[C]	0	--	--	na	1.8E+02	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
Hexachlorocyclohexane Alpha-BHC[C]	0	--	--	na	4.9E-02	--	--	na	4.5E-01	--	--	--	--	--	--	--	--	--	--	na	4.5E-01
Hexachlorocyclohexane Beta-BHC[C]	0	--	--	na	1.7E-01	--	--	na	1.6E+00	--	--	--	--	--	--	--	--	--	--	na	1.6E+00
Hexachlorocyclohexane Gamma-BHC[C] (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.6E+01	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.6E+01
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.8E+03	--	--	--	--	--	--	--	--	--	--	na	1.8E+03
Hexachloroethane[C]	0	--	--	na	3.3E+01	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	--	--	na	3.0E+02
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	1.6E+00	--	--	--	--	--	--	--	--	--	--	na	1.6E+00
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone[C]	0	--	--	na	9.6E+03	--	--	na	8.8E+04	--	--	--	--	--	--	--	--	--	--	na	8.8E+04
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	3.3E+02	3.8E+01	na	--	3.3E+02	3.8E+01	na	--	--	--	--	--	--	--	--	--	3.3E+02	3.8E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	2.4E+03	--	--	--	--	--	--	--	--	--	--	na	2.4E+03
Methylene Chloride [C]	0	--	--	na	5.9E+03	--	--	na	5.4E+04	--	--	--	--	--	--	--	--	--	--	na	5.4E+04
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	3.6E+02	4.0E+01	na	4.6E+03	3.6E+02	4.0E+01	na	7.5E+03	--	--	--	--	--	--	--	--	3.6E+02	4.0E+01	na	7.5E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
N-Nitrosodimethylamine[C]	0	--	--	na	3.0E+01	--	--	na	2.7E+02	--	--	--	--	--	--	--	--	--	--	na	2.7E+02
N-Nitrosodiphenylamine[C]	0	--	--	na	6.0E+01	--	--	na	5.5E+02	--	--	--	--	--	--	--	--	--	--	na	5.5E+02
N-Nitrosodi-n-propylamine[C]	0	--	--	na	5.1E+00	--	--	na	4.7E+01	--	--	--	--	--	--	--	--	--	--	na	4.7E+01
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total[C]	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	5.8E-03	--	--	--	--	--	--	--	--	--	1.4E-02	na	5.8E-03
Pentachlorophenol [C]	0	7.1E+00	5.5E+00	na	3.0E+01	7.1E+00	5.5E+00	na	2.7E+02	--	--	--	--	--	--	--	--	7.1E+00	5.5E+00	na	2.7E+02
Phenol	0	--	--	na	8.6E+05	--	--	na	1.4E+06	--	--	--	--	--	--	--	--	--	--	na	1.4E+06
Pyrene	0	--	--	na	4.0E+03	--	--	na	6.5E+03	--	--	--	--	--	--	--	--	--	--	na	6.5E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	6.8E+03	--	--	--	--	--	--	--	--	**2.0E+01**	**5.0E+00**	**na**	**6.8E+03**
Silver	0	1.4E+01	--	na	--	1.4E+01	--	na	--	--	--	--	--	--	--	--	--	**1.4E+01**	**--**	**na**	**--**
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.7E+02**
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**3.0E+02**
Thallium	0	--	--	na	4.7E-01	--	--	na	7.6E-01	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**7.6E-01**
Toluene	0	--	--	na	6.0E+03	--	--	na	9.8E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**9.8E+03**
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Toxaphene [C]	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.6E-02	--	--	--	--	--	--	--	--	**7.3E-01**	**2.0E-04**	**na**	**2.6E-02**
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	**4.6E-01**	**7.2E-02**	**na**	**--**
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.1E+02**
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**1.5E+03**
Trichloroethylene [C]	0	--	--	na	3.0E+02	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.7E+03**
2,4,6-Trichlorophenol [C]	0	--	--	na	2.4E+01	--	--	na	2.2E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.2E+02**
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**--**
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	2.2E+02	--	--	--	--	--	--	--	--	**--**	**--**	**na**	**2.2E+02**
Zinc	0	2.3E+02	2.3E+02	na	2.6E+04	2.3E+02	2.3E+02	na	4.2E+04	--	--	--	--	--	--	--	--	**2.3E+02**	**2.3E+02**	**na**	**4.2E+04**

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information. Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	1.0E+03
Arsenic	9.0E+01
Barium	na
Cadmium	1.3E+00
Chromium III	8.6E+01
Chromium VI	6.4E+00
Copper	1.1E+01
Iron	na
Lead	2.3E+01
Manganese	na
Mercury	4.6E-01
Nickel	2.4E+01
Selenium	3.0E+00
Silver	5.5E+00
Zinc	9.3E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Madison Wastewater Treatment Plant

Effluent pH Data - January 2010 through July 2014 - Wet Season (December - May)

Month/ Year	Day	pH
Jan-10	1	7.2
	2	7
	3	6.8
	4	6.9
	5	7.2
	6	7
	7	7.3
	8	7.4
	9	7.2
	10	7.1
	11	7.3
	12	7.4
	13	7
	14	7.3
	15	7
	16	6.9
	17	6.4
	18	7.2
	19	6.8
	20	7.6
	21	7.1
	22	7.8
	23	6.9
	24	7.2
	25	7.7
	26	7.5
	27	7
	28	7.1
	29	7.2
	30	7.1
	31	6.7
Feb-10	1	7.2
	2	7.1
	3	6.8
	4	7.2
	5	6.4
	6	6.8
	7	6.9
	8	6.8
	9	6.5
	10	6.9
	11	6.8
	12	6.6
	13	6.7
	14	6.9
	15	7.1
	16	7.3
	17	7.2

Month/ Year	Day	pH
	18	7.5
	19	7.4
	20	7
	21	7.2
	22	7.4
	23	7.3
	24	6.9
	25	7
	26	7.1
	27	6.9
	28	7.2
Mar-10	1	6.7
	2	7
	3	7.1
	4	6.7
	5	6.9
	6	6.9
	7	7.1
	8	7
	9	7
	10	6.5
	11	6.5
	12	6.3
	13	7
	14	7.2
	15	6.6
	16	7.2
	17	
	18	7.4
	19	7.2
	20	6.9
	21	7
	22	7.4
	23	7.4
	24	7.3
	25	7.3
	26	7.3
	27	6.6
	28	6.9
	29	6.9
	30	7.1
	31	7
Apr-10	1	7.2
	2	6.9
	3	6.7
	4	7.2
	5	7.2
	6	7

Month/ Year	Day	pH
Apr-10	7	6.9
	8	6.7
	9	7
	10	6.6
	11	6.7
	12	6.8
	13	7.1
	14	6.4
	15	7.2
	16	7
	17	6.9
	18	7.2
	19	7.3
	20	6.7
	21	6.3
	22	7.1
	23	7.3
	24	6.9
	25	7.2
	26	7.3
	27	7.2
	28	6.9
	29	7.3
	30	7.3
May-10	1	6.9
	2	7.2
	3	7.4
	4	7.3
	5	6.7
	6	7
	7	7.3
	8	7
	9	7
	10	7.2
	11	7.1
	12	7
	13	7.2
	14	7.3
	15	7
	16	6.7
	17	7.3
	18	7.2
	19	7
	20	7.4
	21	7.4
	22	7.1
	23	7.2
	24	7.3

Month/ Year	Day	pH
May-10	25	7.3
	26	7.1
	27	7.4
	28	7.4
	29	6.9
	30	7.2
	31	7.2
Dec-10	1	7.4
	2	6.8
	3	7
	4	6.9
	5	6.5
	6	7.3
	7	6.9
	8	7
	9	7.4
	10	7.1
	11	6.9
	12	7.3
	13	7.3
	14	6.9
	15	7.2
	16	6.9
	17	7.3
	18	7.1
	19	6.9
	20	7.3
	21	7.2
	22	7.3
	23	7.1
	24	7.2
	25	6.7
	26	6.1
	27	7.3
	28	7.2
	29	7.3
	30	7.2
	31	7.1
Jan-11	1	7.1
	2	6.8
	3	7.3
	4	7.2
	5	7.4
	6	7.2
	7	7.3
	8	7
	9	6.9
	10	7.5

Attachment 5

Month/ Year	Day	pH
Jan-11	11	7.4
	12	7.3
	13	7.4
	14	7.5
	15	7.2
	16	6.7
	17	6.9
	18	7.5
	19	7.7
	20	6.9
	21	7.5
	22	6.7
	23	7.2
	24	7.1
	25	7.4
	26	7.5
	27	7.2
	28	7.3
	29	7
	30	6.7
	31	7.3
Feb-11	1	6.9
	2	7.3
	3	7.1
	4	6.9
	5	6.6
	6	7
	7	7
	8	7
	9	7
	10	7.1
	11	7.2
	12	6.8
	13	6.7
	14	6.9
	15	7.2
	16	7.5
	17	6.9
	18	7.2
	19	6.8
	20	6.6
	21	6.9
	22	7.1
	23	7.6
	24	7.4
	25	7.3
	26	6.9
	27	6.8
	28	7.2
Mar-11	1	7.1

Month/ Year	Day	pH
Mar-11	2	7.3
	3	7.4
	4	7.3
	5	6.9
	6	6.9
	7	7.3
	8	7
	9	7.2
	10	6.8
	11	7
	12	7
	13	7.1
	14	7.2
	15	6.8
	16	7.2
	17	7.2
	18	7.1
	19	7
	20	7
	21	7.2
	22	7
	23	7.6
	24	7.1
	25	7.1
	26	6.7
	27	6.5
	28	7.2
	29	7
	30	7.1
	31	7
Apr-11	1	7.2
	2	6.7
	3	6.6
	4	7.3
	5	7
	6	6.9
	7	6.8
	8	7.1
	9	6.6
	10	6.2
	11	7.1
	12	6.9
	13	6.8
	14	6.9
	15	6.7
	16	6.9
	17	6.9
	18	6.9
	19	6.6
	20	6.9

Month/ Year	Day	pH
Apr-11	21	7.2
	22	6.7
	23	6.8
	24	6.8
	25	7.3
	26	6.9
	27	7.4
	28	7.3
	29	7.2
	30	6.7
May-11	1	6.5
	2	7
	3	6.9
	4	7.1
	5	6.7
	6	6.7
	7	6.7
	8	6.7
	9	6.6
	10	7.1
	11	7.2
	12	7.1
	13	7.4
	14	6.8
	15	7.1
	16	7.3
	17	7
	18	7
	19	7.2
	20	7.2
	21	7.1
	22	6.9
	23	6.6
	24	6.8
	25	7.1
	26	7
	27	6.9
	28	7.1
	29	6.3
	30	7.1
	31	7.2
Dec-11	1	7.4
	2	7.2
	3	7.2
	4	6.8
	5	7.1
	6	6.9
	7	7.2
	8	6.8
	9	6.9

Month/ Year	Day	pH
Dec-11	10	7
	11	7
	12	6.9
	13	6.8
	14	7.2
	15	6.9
	16	7
	17	6.9
	18	6.7
	19	7
	20	6.5
	21	7.2
	22	6.9
	23	6.8
	24	6.6
	25	6.9
	26	7
	27	6.9
	28	7
	29	6.8
	30	7
	31	6.4
Jan-12	1	7.9
	2	7.2
	3	7.4
	4	7
	5	7
	6	6.9
	7	6.8
	8	6.7
	9	6.6
	10	7
	11	7.1
	12	7
	13	7
	14	7
	15	6.9
	16	6.7
	17	6.8
	18	7.1
	19	7.1
	20	7.1
	21	7.2
	22	6.7
	23	6.9
	24	6.8
	25	7.1
	26	6.6
	27	7.1
	28	7.1

Month/ Year	Day	pH
Jan-12	29	6.7
	30	6.6
	31	6.9
Feb-12	1	7.2
	2	7.1
	3	7.1
	4	6.6
	5	6.8
	6	6.9
	7	7.1
	8	6.4
	9	7
	10	7.1
	11	7
	12	6.8
	13	7.1
	14	6.7
	15	7
	16	7
	17	7.2
	18	6.9
	19	6.7
	20	7
	21	7
	22	7
	23	6.9
	24	7
	25	7.2
	26	7.1
	27	7
	28	6.8
	29	7.7
Mar-12	1	6.7
	2	6.6
	3	7
	4	7
	5	7.1
	6	7.2
	7	7.1
	8	7.2
	9	7.1
	10	6.9
	11	7.1
	12	7.1
	13	7
	14	7.1
	15	7.2
	16	7.1
	17	7.3
	18	7.1

Month/ Year	Day	pH
Mar-12	19	7.1
	20	7.2
	21	7.2
	22	7.1
	23	7.2
	24	7.2
	25	7.3
	26	7.3
	27	7.3
	28	7.1
	29	7.3
	30	7.2
	31	7.3
Apr-12	1	7.2
	2	7.3
	3	7.2
	4	7.4
	5	7.3
	6	7.2
	7	6
	8	7.3
	9	7.1
	10	7.3
	11	7.4
	12	7.3
	13	7.7
	14	7.6
	15	7.4
	16	7.3
	17	7.2
	18	7.4
	19	7.4
	20	7.5
	21	7.2
	22	7
	23	7.1
	24	7.1
	25	7.3
	26	7.2
	27	7.4
	28	7.1
	29	7.3
	30	7
May-12	1	7.2
	2	7.4
	3	7.4
	4	7.2
	5	6.9
	6	7
	7	7.3

Month/ Year	Day	pH
May-12	8	7
	9	7.1
	10	7.4
	11	7.4
	12	7.3
	13	7.2
	14	7.6
	15	7.2
	16	7.4
	17	7.5
	18	7.1
	19	7.3
	20	7
	21	7.1
	22	7.4
	23	7.2
	24	7.4
	25	7.5
	26	7.6
	27	7.2
	28	7.1
	29	7.2
	30	7.4
	31	7.5
Dec-12	1	6.8
	2	6.7
	3	6.9
	4	6.7
	5	6.6
	6	6.6
	7	7.3
	8	6.6
	9	6.9
	10	6.6
	11	6.5
	12	7.1
	13	7.2
	14	7.1
	15	6.7
	16	6.2
	17	7.2
	18	7
	19	7.3
	20	7.1
	21	7.2
	22	7.4
	23	7.3
	24	7.2
	25	7
	26	7

Month/ Year	Day	pH
Dec-12	27	6.4
	28	6.4
	29	6.4
	30	6.5
	31	6.6
Jan-13	1	7.3
	2	6.8
	3	7
	4	7.3
	5	7.4
	6	7.1
	7	7.1
	8	6.8
	9	7.3
	10	7.1
	11	7.2
	12	6.7
	13	6.5
	14	6.8
	15	6.8
	16	6.8
	17	6.7
	18	6.8
	19	7.3
	20	7.2
	21	7.1
	22	6.9
	23	6.8
	24	7
	25	6.9
	26	7
	27	6.9
	28	7.2
	29	6.8
	30	6.8
	31	7
Feb-13	1	6.8
	2	7
	3	7
	4	6.9
	5	7
	6	7
	7	7
	8	7.3
	9	6.8
	10	7
	11	6.9
	12	6.9
	13	6.9
	14	7.3

Month/ Year	Day	pH
Jan-13	15	7.2
	16	7
	17	7.1
	18	7.2
	19	6.8
	20	7.3
	21	7.4
	22	7.3
	23	7.1
	24	7.1
	25	6.9
	26	7.2
	27	6.8
	28	6.9
Mar-13	1	7.3
	2	7.3
	3	7
	4	6.8
	5	7.1
	6	6.8
	7	7.1
	8	7.1
	9	7.2
	10	7.2
	11	7.2
	12	7
	13	7.1
	14	6.8
	15	7.3
	16	7.3
	17	7.1
	18	7.5
	19	7.4
	20	7.3
	21	7.4
	22	7.3
	23	7.1
	24	7.2
	25	7.4
	26	7.1
	27	7.3
	28	7.3
	29	7.1
	30	7.4
	31	7.3
Apr-13	1	7.2
	2	7.4
	3	7.5
	4	7.3
	5	7.4

Month/ Year	Day	pH
Apr-13	6	7.5
	7	7.4
	8	7.2
	9	7.2
	10	6.9
	11	7.3
	12	7.2
	13	7.5
	14	7.4
	15	7.1
	16	7.2
	17	7.4
	18	6.6
	19	7.2
	20	7.1
	21	7
	22	7.1
	23	7.1
	24	7.3
	25	7.1
	26	6.9
	27	7.3
	28	7.1
	29	7.2
	30	7
May-13	1	7
	2	7.4
	3	7.2
	4	6.8
	5	7.2
	6	7
	7	7.2
	8	7
	9	7.1
	10	6.9
	11	6.9
	12	6.9
	13	7.1
	14	7.1
	15	7.2
	16	7.2
	17	7.3
	18	7.4
	19	7.4
	20	7.2
	21	7.1
	22	7.3
	23	7.2
	24	7.2
	25	7.2

Month/ Year	Day	pH
May-13	26	7.1
	27	7.1
	28	7.1
	29	7.3
	30	7.3
	31	7.4
Dec-13	1	6.9
	2	7
	3	7.1
	4	7
	5	7.4
	6	7.5
	7	6.7
	8	7
	9	7.3
	10	7.1
	11	7
	12	6.9
	13	7
	14	6.9
	15	6.9
	16	7.1
	17	6.9
	18	7
	19	7
	20	7.4
	21	6.9
	22	7
	23	6.9
	24	6.9
	25	7.1
	26	7.2
	27	7.1
	28	7.2
	29	6.8
	30	6.8
	31	7.1
Jan-14	1	7.2
	2	7.1
	3	7.1
	4	6.9
	5	6.8
	6	7.2
	7	7.3
	8	7.3
	9	7.2
	10	7.2
	11	6.5
	12	6.4
	13	6.9

Month/ Year	Day	pH
Jan-14	14	7.3
	15	7.3
	16	7.1
	17	7.2
	18	7
	19	6.9
	20	7.2
	21	7.1
	22	7.4
	23	7.4
	24	7.3
	25	6.7
	26	7.1
	27	7
	28	7.4
	29	7.5
	30	7.2
	31	7.3
Feb-14	1	6.7
	2	6.7
	3	7
	4	6.8
	5	6.9
	6	7.2
	7	7.1
	8	7
	9	7
	10	7.4
	11	7.3
	12	7.5
	13	7.4
	14	7.2
	15	7.2
	16	7.1
	17	7.1
	18	7.1
	19	7.4
	20	7.2
	21	7.4
	22	7.4
	23	7
	24	7.4
	25	7.5
	26	7.5
	27	7.5
	28	7.5
Mar-14	1	7.1
	2	7.4
	3	7.3
	4	7.2

Month/ Year	Day	pH
Mar-14	5	7.5
	6	7.3
	7	7.6
	8	7.1
	9	7
	10	7.5
	11	7.6
	12	7.6
	13	7.6
	14	7.4
	15	7.1
	16	7.1
	17	7.4
	18	7.4
	19	7.3
	20	7.5
	21	7.6
	22	7.1
	23	7.1
	24	7.5
	25	7.3
	26	7.4
	27	7.3
	28	7.4
	29	7.2
	30	6.9
	31	7.4
Apr-14	1	7.6
	2	7.5
	3	7.5
	4	7.5
	5	7.1
	6	7
	7	7.5
	8	7.2
	9	6.8
	10	7.2
	11	7
	12	7
	13	7.2
	14	7
	15	7
	16	7
	17	7.2
	18	7.2
	19	6.9
	20	7.1
	21	7.2
	22	7.4
	23	7.4

Month/ Year	Day	pH
	24	7
	25	7.1
	26	7.3
	27	7.6
	28	7.7
	29	6.9
	30	6.9
May-14	1	7.1
	2	7.4
	3	7
	4	7
	5	7.4
	6	7.1
	7	7.4
	8	7.3
	9	7.5
	10	7.2
	11	7
	12	7.5
	13	7.5
	14	7.4
	15	7.6
	16	6.9
	17	7.1
	18	7.3
	19	7.2
	20	7
	21	7.4
	22	7.4
	23	7.5
	24	7.1
	25	7.2
	26	7.6
	27	7.4
	28	7.4
	29	7.2
	30	7.2
	31	7.2

90th Percentile pH = 7.4 SU

Madison Wastewater Treatment Plant

Effluent pH Data - January 2010 through July 2014 - Dry Season (June - November)

Month/ Year	Day	pH
Jun-10	1	7.4
	2	6.9
	3	7.3
	4	7.5
	5	6.8
	6	7.3
	7	7.4
	8	7.5
	9	7
	10	7
	11	7.3
	12	6.7
	13	7.1
	14	7.1
	15	7.4
	16	73
	17	7.3
	18	7.5
	19	7.4
	20	7.3
	21	7.4
	22	7.4
	23	7.3
	24	7.2
	25	7.4
	26	7
	27	7
	28	7.4
	29	7.3
	30	7.3
Jul-10	1	7.3
	2	7.5
	3	7.5
	4	7.6
	5	7.3
	6	7.6
	7	7.5
	8	7.5
	9	7.7
	10	7.7
	11	7.5
	12	7.5
	13	7.5
	14	7.5
	15	7.5
	16	7.6
	17	7.5
	18	7.4
	19	7.7
	20	7.7
	21	7.7
	22	7.7
	23	7.7
	24	7.6

Month/ Year	Day	pH
Jul-10	25	7.6
	26	7.5
	27	7.7
	28	7.4
	29	7.5
	30	7.3
	31	7.2
Aug-10	1	7.4
	2	7.5
	3	7.4
	4	7.3
	5	7.4
	6	7.5
	7	7.3
	8	7.4
	9	7.5
	10	7.5
	11	7.7
	12	7.4
	13	7.6
	14	7.5
	15	7.1
	16	7.6
	17	7.5
	18	7.7
	19	7.6
	20	7.2
	21	7.4
	22	7.5
	23	7.3
	24	7.6
	25	7.4
	26	7.6
	27	7.6
	28	7.5
	29	6.2
	30	7.7
	31	7.7
Sep-10	1	7.4
	2	7.5
	3	7.3
	4	7.4
	5	7.5
	6	7.5
	7	7.4
	8	7.2
	9	7.4
	10	7.3
	11	7
	12	6.9
	13	7.1
	14	7.4
	15	7.5
	16	7.1

Month/ Year	Day	pH
Sep-10	17	6.9
	18	6.5
	19	7.2
	20	7
	21	7.1
	22	7.3
	23	6.9
	24	7.4
	25	6.6
	26	6.3
	27	7.3
	28	7.1
	29	7.2
	30	7.2
Oct-10	1	7.1
	2	7.3
	3	6.8
	4	7.5
	5	7.2
	6	7.5
	7	7.1
	8	7.2
	9	7.4
	10	6.8
	11	7.6
	12	7.9
	13	7.3
	14	7.3
	15	7.1
	16	7
	17	7.2
	18	7.3
	19	7.2
	20	7.4
	21	7.1
	22	7.3
	23	7.4
	24	6
	25	7.3
	26	7.2
	27	7.4
	28	7.1
	29	7.2
	30	7.2
	31	7.1
Nov-10	1	7.1
	2	7.3
	3	7.3
	4	7.6
	5	7.2
	6	6.7
	7	6.3
	8	7.3
	9	7.2

Month/ Year	Day	pH
Nov-10	10	7.3
	11	7.1
	12	7.3
	13	6.8
	14	7
	15	7.6
	16	7.4
	17	7
	18	6.8
	19	7.2
	20	7
	21	7.3
	22	7.3
	23	7.1
	24	7.1
	25	7.3
	26	6.8
	27	6.4
	28	
	29	7.1
	30	7.1
Jun-11	1	7.4
	2	7.4
	3	7.2
	4	6.8
	5	6.3
	6	6.9
	7	7.4
	8	7.3
	9	7.3
	10	7.4
	11	7.3
	12	7.1
	13	7.2
	14	7.3
	15	7.5
	16	7.4
	17	7.4
	18	7.5
	19	7.1
	20	7.1
	21	7.3
	22	7
	23	7.3
	24	7.4
	25	7.3
	26	7.1
	27	7.2
	28	6.8
	29	7.4
	30	7.3
Jul-11	1	7.3
	2	7.1
	3	6.8

Madison Wastewater Treatment Plant

Effluent pH Data - January 2010 through July 2014 - Dry Season (June - November)

Month/ Year	Day	pH
Jun-10	1	7.4
	2	6.9
	3	7.3
	4	7.5
	5	6.8
	6	7.3
	7	7.4
	8	7.5
	9	7
	10	7
	11	7.3
	12	6.7
	13	7.1
	14	7.1
	15	7.4
	16	73
	17	7.3
	18	7.5
	19	7.4
	20	7.3
	21	7.4
	22	7.4
	23	7.3
	24	7.2
	25	7.4
	26	7
	27	7
	28	7.4
	29	7.3
	30	7.3
Jul-10	1	7.3
	2	7.5
	3	7.5
	4	7.6
	5	7.3
	6	7.6
	7	7.5
	8	7.5
	9	7.7
	10	7.7
	11	7.5
	12	7.5
	13	7.5
	14	7.5
	15	7.5
	16	7.6
	17	7.5
	18	7.4
	19	7.7
	20	7.7
	21	7.7
	22	7.7
	23	7.7
	24	7.6

Month/ Year	Day	pH
Jul-10	25	7.6
	26	7.5
	27	7.7
	28	7.4
	29	7.5
	30	7.3
	31	7.2
Aug-10	1	7.4
	2	7.5
	3	7.4
	4	7.3
	5	7.4
	6	7.5
	7	7.3
	8	7.4
	9	7.5
	10	7.5
	11	7.7
	12	7.4
	13	7.6
	14	7.5
	15	7.1
	16	7.6
	17	7.5
	18	7.7
	19	7.6
	20	7.2
	21	7.4
	22	7.5
	23	7.3
	24	7.6
	25	7.4
	26	7.6
	27	7.6
	28	7.5
	29	6.2
	30	7.7
	31	7.7
Sep-10	1	7.4
	2	7.5
	3	7.3
	4	7.4
	5	7.5
	6	7.5
	7	7.4
	8	7.2
	9	7.4
	10	7.3
	11	7
	12	6.9
	13	7.1
	14	7.4
	15	7.5
	16	7.1

Month/ Year	Day	pH
Sep-10	17	6.9
	18	6.5
	19	7.2
	20	7
	21	7.1
	22	7.3
	23	6.9
	24	7.4
	25	6.6
	26	6.3
	27	7.3
	28	7.1
	29	7.2
	30	7.2
Oct-10	1	7.1
	2	7.3
	3	6.8
	4	7.5
	5	7.2
	6	7.5
	7	7.1
	8	7.2
	9	7.4
	10	6.8
	11	7.6
	12	7.9
	13	7.3
	14	7.3
	15	7.1
	16	7
	17	7.2
	18	7.3
	19	7.2
	20	7.4
	21	7.1
	22	7.3
	23	7.4
	24	6
	25	7.3
	26	7.2
	27	7.4
	28	7.1
	29	7.2
	30	7.2
	31	7.1
Nov-10	1	7.1
	2	7.3
	3	7.3
	4	7.6
	5	7.2
	6	6.7
	7	6.3
	8	7.3
	9	7.2

Month/ Year	Day	pH
Nov-10	10	7.3
	11	7.1
	12	7.3
	13	6.8
	14	7
	15	7.6
	16	7.4
	17	7
	18	6.8
	19	7.2
	20	7
	21	7.3
	22	7.3
	23	7.1
	24	7.1
	25	7.3
	26	6.8
	27	6.4
	28	
	29	7.1
	30	7.1
Jun-11	1	7.4
	2	7.4
	3	7.2
	4	6.8
	5	6.3
	6	6.9
	7	7.4
	8	7.3
	9	7.3
	10	7.4
	11	7.3
	12	7.1
	13	7.2
	14	7.3
	15	7.5
	16	7.4
	17	7.4
	18	7.5
	19	7.1
	20	7.1
	21	7.3
	22	7
	23	7.3
	24	7.4
	25	7.3
	26	7.1
	27	7.2
	28	6.8
	29	7.4
	30	7.3
Jul-11	1	7.3
	2	7.1
	3	6.8

Month/ Year	Day	pH
Jul-11	4	6.2
	5	7.2
	6	7.2
	7	7
	8	7.2
	9	7
	10	6.9
	11	6.9
	12	6.9
	13	7.3
	14	7.2
	15	7.2
	16	6.8
	17	7
	18	6.8
	19	7.2
	20	7.3
	21	7.1
	22	6.9
	23	6.7
	24	6.7
	25	6.8
	26	6.9
	27	7
	28	7.4
	29	7.1
	30	7
	31	6.8
Aug-11	1	7
	2	7.1
	3	7.1
	4	7.8
	5	7.1
	6	6.8
	7	6.6
	8	6.7
	9	6.8
	10	6.7
	11	6.8
	12	7.8
	13	6.9
	14	7.3
	15	7.2
	16	7.3
	17	7.5
	18	7.5
	19	7.1
	20	6.9
	21	7.1
	22	6.9
	23	7.1
	24	7.2
	25	7.2
	26	7

Month/ Year	Day	pH
Aug-11	27	7.2
	28	6.7
	29	6.8
	30	7
	31	7
Sep-11	1	7
	2	7.2
	3	6.6
	4	6.9
	5	6.4
	6	7
	7	7
	8	6.8
	9	7.3
	10	7.1
	11	7.2
	12	6.9
	13	7.2
	14	7.1
	15	6.9
	16	7
	17	6.7
	18	6.7
	19	6.7
	20	6.9
	21	6.7
	22	7
	23	6.6
	24	6.7
	25	6.4
	26	6.8
	27	7
	28	7.2
	29	6.9
	30	7
Oct-11	1	7.2
	2	7
	3	7.2
	4	7.1
	5	7.3
	6	7.4
	7	7.3
	8	7
	9	6.9
	10	6.8
	11	7.1
	12	7
	13	7.2
	14	7.1
	15	7.4
	16	6.9
	17	6.8
	18	6.8
	19	7.1

Month/ Year	Day	pH
Oct-11	20	7.3
	21	7.3
	22	7.1
	23	7.2
	24	7.2
	25	6.8
	26	7.2
	27	7.1
	28	7.5
	29	6.8
	30	6.4
	31	6.8
Nov-11	1	6.9
	2	6.9
	3	6.9
	4	7
	5	6.9
	6	7
	7	7
	8	6.9
	9	7.1
	10	6.9
	11	7.1
	12	7.1
	13	7
	14	6.5
	15	6.9
	16	6.8
	17	7
	18	6.7
	19	7
	20	6.5
	21	7
	22	7.2
	23	6.7
	24	6.8
	25	6.5
	26	6.9
	27	6.8
	28	6.6
	29	7.5
	30	7
Jun-12	1	7.5
	2	7.3
	3	7.2
	4	7.3
	5	7.3
	6	7
	7	7.4
	8	7.5
	9	7.5
	10	7.1
	11	7.2
	12	7.3

Month/ Year	Day	pH
Jun-12	13	7
	14	7.4
	15	7.2
	16	7.2
	17	7
	18	7.5
	19	7
	20	7.4
	21	7.4
	22	7.3
	23	7.4
	24	7
	25	6.9
	26	7.3
	27	7.2
	28	7.3
	29	7.3
	30	6.8
Jul-12	1	7
	2	6.8
	3	6.9
	4	7.5
	5	6.9
	6	7.5
	7	7.3
	8	7.2
	9	7.3
	10	6.9
	11	7.3
	12	7.4
	13	7.1
	14	7
	15	6.9
	16	6.9
	17	7.2
	18	7.4
	19	7.5
	20	7.3
	21	7.3
	22	7.3
	23	6.8
	24	7.3
	25	7.4
	26	7.1
	27	7.3
	28	7
	29	6.9
	30	7.4
	31	7.2
Aug-12	1	6.6
	2	7.2
	3	7.4
	4	6.8
	5	7.2

Month/ Year	Day	pH
Aug-12	6	6.8
	7	6.7
	8	7.1
	9	7.2
	10	7.4
	11	7.1
	12	6.9
	13	7.3
	14	7.4
	15	7.3
	16	7.4
	17	7.2
	18	7.3
	19	6.9
	20	7.1
	21	7.1
	22	7.4
	23	7.1
	24	7.2
	25	7.3
	26	7.2
	27	7.2
	28	7.1
	29	7.1
	30	7.3
	31	7.2
Sep-12	1	7.1
	2	6.9
	3	6.9
	4	6.9
	5	7.2
	6	7.4
	7	7.2
	8	7.2
	9	7.1
	10	7.2
	11	7.3
	12	7.2
	13	7.2
	14	7.1
	15	6.7
	16	6.7
	17	6.8
	18	6.6
	19	7
	20	7.1
	21	6.9
	22	6.7
	23	6.8
	24	7.3
	25	7.2
	26	6.5
	27	7.2
	28	7.2

Month/ Year	Day	pH
Sep-12	29	6.5
	30	6.9
Oct-12	1	6.9
	2	7.2
	3	7
	4	7.2
	5	7.2
	6	7
	7	6.7
	8	7.2
	9	7.1
	10	7.2
	11	7.1
	12	6.9
	13	7.1
	14	6.6
	15	7.1
	16	7.3
	17	6.9
	18	7.2
	19	7.2
	20	7.3
	21	7
	22	7.1
	23	6.9
	24	7.1
	25	7.2
	26	7.2
	27	6.9
	28	7.1
	29	7.3
	30	6.7
	31	7.1
Nov-12	1	7.1
	2	6.6
	3	7.3
	4	7.1
	5	7.2
	6	7
	7	6.8
	8	6.6
	9	7.2
	10	6.5
	11	7.1
	12	6.6
	13	7.1
	14	6.9
	15	6.7
	16	6.9
	17	6.6
	18	6.8
	19	7.1
	20	6.5
	21	7.3

Month/ Year	Day	pH
Nov-12	22	6.8
	23	7.1
	24	7
	25	7.1
	26	7.2
	27	6.7
	28	6.8
	29	7.2
	30	6.9
Jun-13	1	7.3
	2	7.1
	3	6.9
	4	7.3
	5	7.4
	6	7.3
	7	6.9
	8	7.3
	9	7.2
	10	6.8
	11	6.9
	12	7.1
	13	7.3
	14	7.3
	15	6.9
	16	7.1
	17	7.3
	18	7.3
	19	7.2
	20	7.5
	21	7.5
	22	7.3
	23	7.2
	24	7.4
	25	7.5
	26	7.4
	27	7.1
	28	7.3
	29	7
	30	7.3
Jul-13	1	7.5
	2	7.2
	3	7
	4	7.5
	5	7.3
	6	7.2
	7	7.3
	8	7.4
	9	7.3
	10	7.5
	11	7.6
	12	7.4
	13	7
	14	7
	15	7.5

Month/ Year	Day	pH
Jul-13	16	7.2
	17	7.3
	18	7.4
	19	7.3
	20	7.2
	21	6.9
	22	7.1
	23	7.1
	24	7.5
	25	7.4
	26	7.4
	27	7.4
	28	7
	29	7.4
	30	7.6
	31	7.4
Aug-13	1	7.2
	2	7.3
	3	6.9
	4	6.9
	5	7.6
	6	7.5
	7	7.5
	8	7.5
	9	7.5
	10	6.9
	11	6.9
	12	7.5
	13	7.4
	14	7.5
	15	7.4
	16	7.4
	17	7.1
	18	6.8
	19	7.3
	20	7.3
	21	7.5
	22	7.2
	23	7.1
	24	6.9
	25	6.9
	26	7.3
	27	7.1
	28	7.2
	29	7.4
	30	7.3
	31	7.1
Sep-13	1	6.6
	2	7.4
	3	7
	4	7.2
	5	7.2
	6	6.9
	7	6.4

Month/ Year	Day	pH
Sep-13	8	6.9
	9	7.4
	10	7
	11	6.5
	12	7.3
	13	7.5
	14	6.3
	15	6.2
	16	7.5
	17	7.1
	18	7.3
	19	7.5
	20	7.4
	21	7.1
	22	7.1
	23	7.1
	24	7.2
	25	6.5
	26	7.2
	27	7.4
	28	6.5
	29	6.4
	30	6.3
Oct-13	1	7.2
	2	7.4
	3	7.4
	4	7.5
	5	7.1
	6	7
	7	6.8
	8	6.2
	9	7.3
	10	7.1
	11	7.1
	12	7
	13	7.1
	14	7.1
	15	7
	16	7.1
	17	7.1
	18	7.1
	19	7.3
	20	7.5
	21	7.3
	22	7.4
	23	7.4
	24	7.4
	25	7.6
	26	7
	27	7.4
	28	7.2
	29	7.1
	30	7.2
	31	7.2

Month/ Year	Day	pH
Nov-13	1	7.1
	2	6.7
	3	6.8
	4	7.4
	5	7.4
	6	6.8
	7	6.9
	8	7.1
	9	6.9
	10	6.7
	11	7
	12	7.3
	13	6.8
	14	7.1
	15	7.2
	16	6.9
	17	7.1
	18	7
	19	7.3
	20	6.9
	21	7.3
	22	7.2
	23	6.8
	24	6.6
	25	7.2
	26	7.2
	27	6.6
	28	7.2
	29	7
	30	7.1
Jun-14	1	7.6
	2	7.6
	3	7.1
	4	7.6
	5	7.4
	6	7.5
	7	7.3
	8	7.3
	9	7.3
	10	7.3
	11	7.3
	12	7.4
	13	7.4
	14	7
	15	7.1
	16	7.5
	17	7.4
	18	7.4
	19	7.6
	20	7.5
	21	7.1
	22	7.2
	23	7.4
	24	7.7

Month/ Year	Day	pH
Jun-14	25	7.5
	26	7.5
	27	7.6
	28	7.2
	29	7.7
	30	7.6
Jul-14	1	7.8
	2	7.6
	3	7.5
	4	7.2
	5	6.9
	6	7
	7	7.4
	8	7.5
	9	7.5
	10	7.6
	11	7.5
	12	7.4
	13	7.3
	14	7.4
	15	7.4
	16	7.5
	17	7.6
	18	7.5
	19	7.3
	20	7.4
	21	7.5
	22	7.6
	23	7.6
	24	7.6
	25	7.5
	26	7.3
	27	7
	28	7.4
	29	7.6
	30	7.4
	31	7.5

90th Percentile pH = 7.5 SU

Mixing Zone Predictions for Madison POTW

Effluent Flow = .08 MGD
Stream 7Q10 = .32 MGD
Stream 30Q10 = .41 MGD
Stream 1Q10 = .25 MGD
Stream slope = .001 ft/ft
Stream width = 5 ft
Bottom scale = 2
Channel scale = 1

high flows

Mixing Zone Predictions @ 7Q10

Depth = .4173 ft
Length = 61.36 ft
Velocity = .2967 ft/sec
Residence Time = .0024 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = .4751 ft
Length = 54.35 ft
Velocity = .3193 ft/sec
Residence Time = .002 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .3694 ft
Length = 68.66 ft
Velocity = .2766 ft/sec
Residence Time = .069 hours

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 1Q10 may be used.

Madison WWTP Effluent Total Hardness Data January 2010 through July 2014

Date	Total Hardness
1/12/2010	270
2/26/2010	205
3/24/2010	225
4/23/2010	240
5/24/2010	210
6/21/2010	205
7/2/2010	222
8/31/2010	180
9/24/2010	215
10/15/2010	205
11/16/2010	230
12/3/2010	210
1/3/2011	270
2/10/2011	270
3/2/2011	270
4/4/2011	250
5/2/2011	200
6/8/2011	230
7/4/2011	210
8/3/2011	210
9/2/2011	210
10/4/2011	205
11/8/2011	220
12/6/2011	245
1/10/2012	240
2/2/2012	225
3/8/2012	265
4/1/2012	220
5/8/2012	235
6/9/2012	270
7/17/2012	230
8/6/2012	215
9/5/2012	200
10/5/2012	220
11/1/2012	220
12/3/2012	195
1/4/2013	210
2/5/2013	210
3/1/2013	250
4/1/2013	235
5/1/2013	245
6/4/2013	220
7/1/2013	210
8/6/2013	227
9/2/2013	200
10/1/2013	210
11/5/2013	227
12/3/2013	200
1/2/2014	205
2/5/2014	195
3/6/2014	220
4/3/2014	285
5/6/2014	190
6/3/2014	200
7/1/2014	235

Total Hardness Average = 224 mg/L

Attachment 7

9/22/2014 1:55:36 PM

Facility = Madison WWTP June - Nov
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 19.9
WLAc = 2.22
Q.L. = .2
# samples/mo. = 4
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 4.47922760738421
Average Weekly limit = 4.47922760738421
Average Monthly LImit = 3.06256312923086

The data are:

9

9/22/2014 1:56:31 PM

Facility = Madison WWTP Dec - May
Chemical = Ammonia
Chronic averaging period = 30
WLAa = 73
WLAc = 24.8
Q.L. = .2
# samples/mo. = 4
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

9

Analysis of the Madison POTW (Dec-May) effluent data for Ammonia
Averaging period for standard = 30 days

The statistics for Ammonia are:

Number of values	= 1
Quantification level	= .2
Number of quantification	= 0
Expected value	= 10
Variance	= 36.00001
C.V.	= .6
97th percentile	= 24.33418
Statistics used	= Reasonable potential assumptions - Type 2 data

Ammonia calculation from 2004 Reissuance that is being carried forward for this reissuance.

The WLAs for Ammonia are:

Acute WLA	= 63.69
Chronic WLA	= 10.78
Human Health WLA	= ----

Limits are based on chronic toxicity and 4 samples/month, 1 samples/week

Maximum daily limit	= 21.75048
Average weekly limit	= 21.75048
Average monthly limit	= 14.87136

Note: The maximum daily limit applies to industrial dischargers
The average weekly limit applies to POTWs
The average monthly limit applies to both.

The Data are
10

Facility = Madison POTW
Chemical = Chlorine
Chronic averaging period = 4
WLAa = 0.019
WLAc = 0.011
Q.L. = 0.1
# samples/mo. = 28
# samples/wk. = 7

Summary of Statistics:

observations = 1
Expected Value = .2
Variance = .0144
C.V. = 0.6
97th percentile daily values = .486683
97th percentile 4 day average = .332758
97th percentile 30 day average= .241210
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 1.60883226245855E-02
Average Weekly limit = 9.8252545713861E-03
Average Monthly Limit = 8.02152773888032E-03

The data are:

0.2

9/22/2014 2:00:26 PM

Facility = Madison WWTP
Chemical = Total Recoverable Zinc
Chronic averaging period = 4
WLAa = 230
WLAc = 230
Q.L. = .5
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 23
Expected Value = 48.7005
Variance = 240.674
C.V. = 0.318552
97th percentile daily values = 83.2745
97th percentile 4 day average = 64.7729
97th percentile 30 day average= 54.0282
< Q.L. = 0
Model used = lognormal

No Limit is required for this material

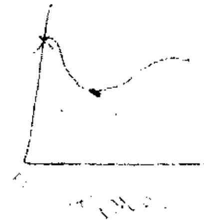
The data are:

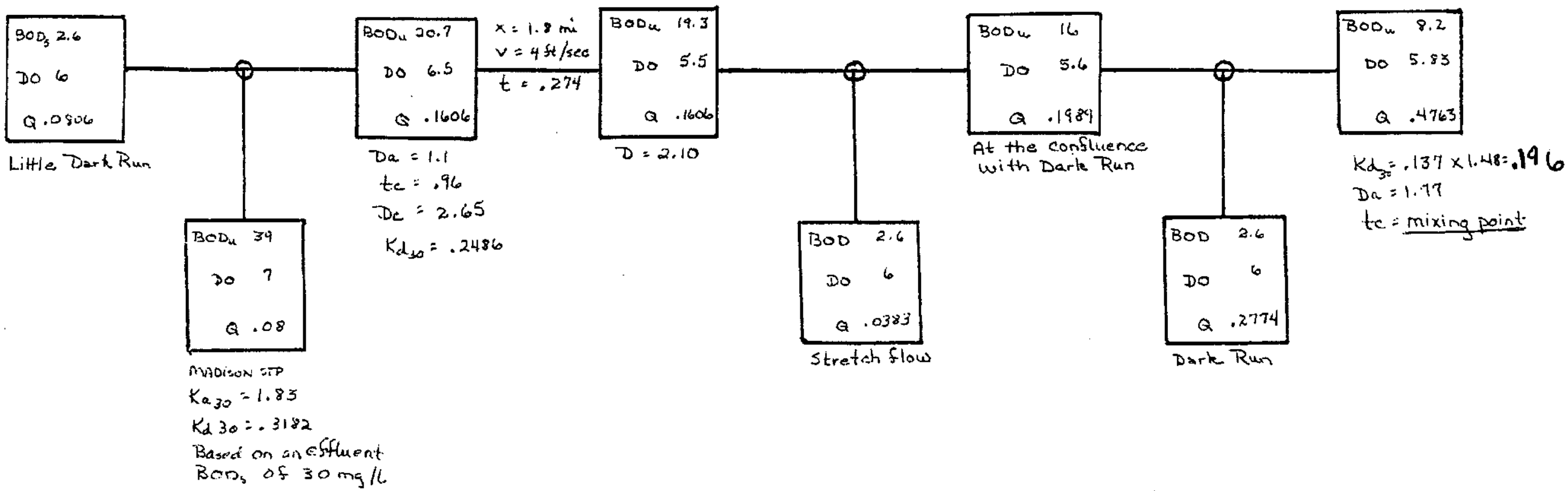
45.9
47.8
39.9
36.6
62.3
46.1
57.8
60.8
32.8
35.7
56.3
39.7
58.7
27.4
50.7
71.3
71.5
24.2
44.8
56.3
69.2
50.9
28.3

Madison Wastewater Treatment Plant
Clean metals results

	Total Recoverable Zinc
2009	
January 12	45.9
April 7	47.8
July 14	39.9
December 15	36.6
2010	
April 27	62.3
June 14	46.1
October 12	57.8
2011	
January 25	60.8
March 8	32.8
May 23	35.7
September 1	56.3
November 9	39.7
2012	
February 8	58.7
May 9	27.4
August 8	50.7
November	71.3
2013	
February 8	71.5
May 9	24.2
August 7	44.8
November 13	56.3
2014	
February 10	69.2
May 9	50.9
August 13	28.3

Madison County : Madison STP Expansion SAA 3/21/75

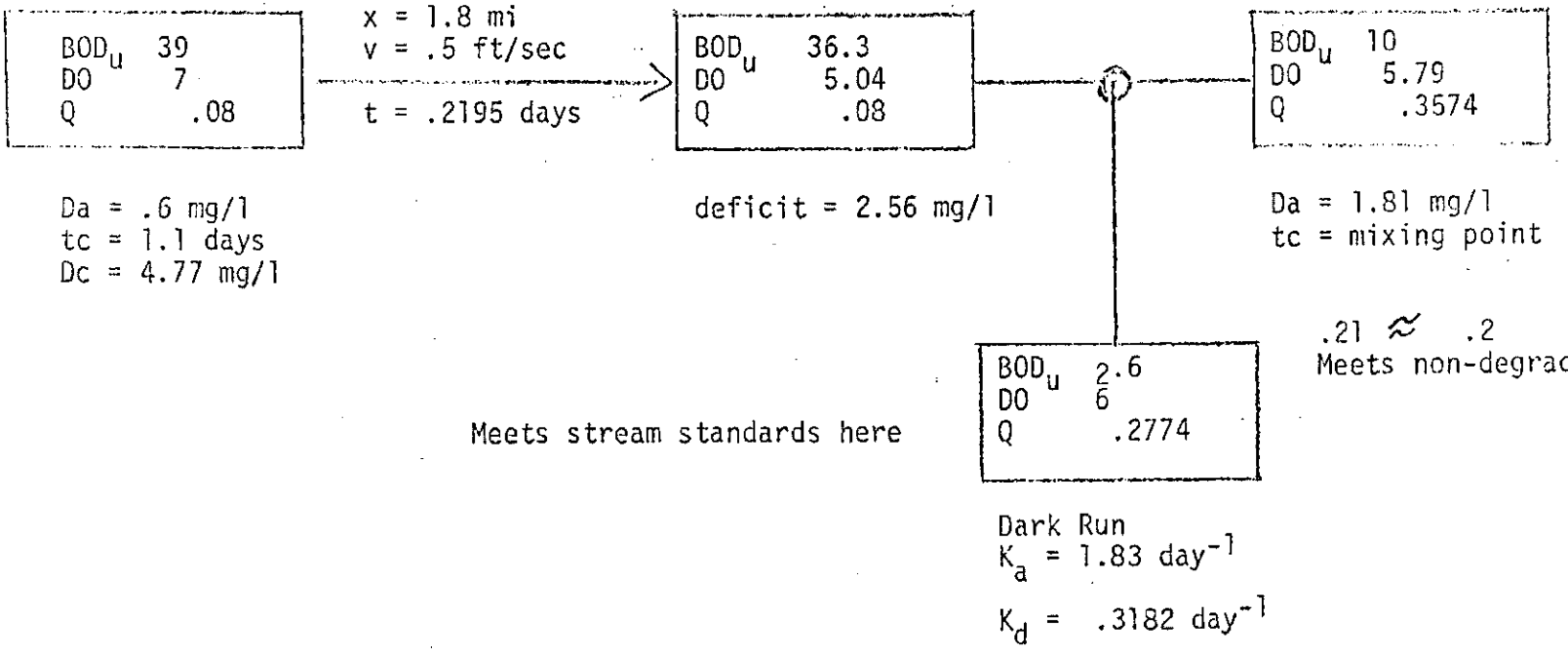




Attachment II

Proposed flow = .08 MGD
BOD_5 in effluent = 30 mg/l
K_{a30} = 1.83 day^{-1}

K_{d30} = .3182 day^{-1}



Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Madison County, Virginia.

PUBLIC COMMENT PERIOD: XXX, 2014 to XXX, 2014

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Rapidan Service Authority, P. O. Box 148, Ruckersville, VA 22968, VA0022845

NAME AND ADDRESS OF FACILITY: Madison Wastewater Treatment Plant, 1033 Fishback Road, Madison, VA 22727

PROJECT DESCRIPTION: Rapidan Service Authority has applied for a reissuance of a permit for the public Madison Wastewater Treatment Plant. The applicant proposes to release treated sewage wastewaters from residential and commercial areas at a rate of 0.08 million gallons per day into a water body. The sludge will be disposed by trucking it to the Maplewood Recycling and Waste Disposal Facility. The facility proposes to release the treated sewage in the Little Dark Run in Madison County in the Rappahannock River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, $cBOD_5$, Total Residual Chlorine, Total Suspended Solids, Dissolved Oxgyen, Ammonia as N, and *E.coli*.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by hand-delivery, e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the draft permit and application at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.
Name: Joan C. Crowther
Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193
Phone: (703) 583-3925 E-mail: joan.crowther@deq.virginia.gov Fax: (703) 583-3821